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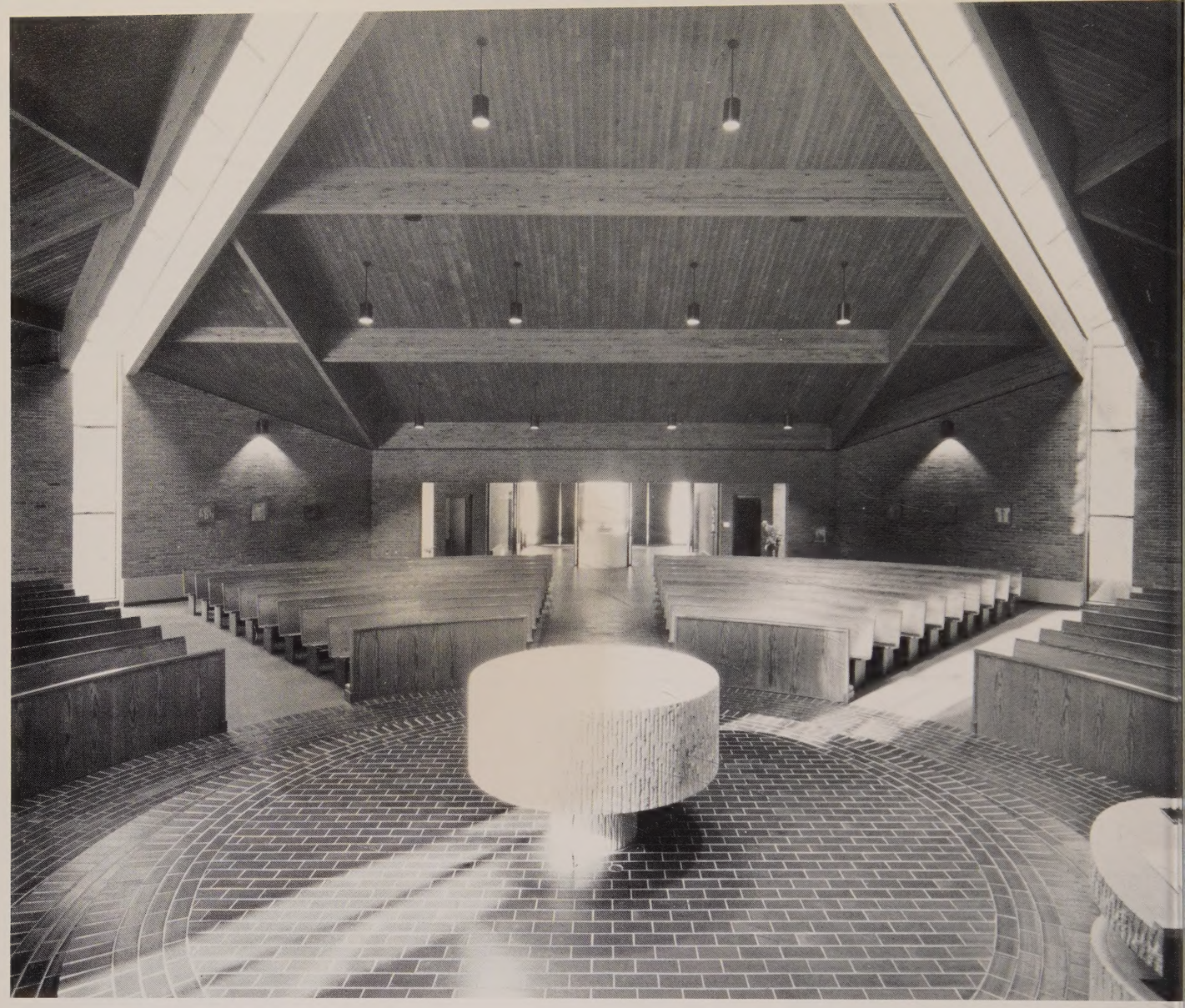

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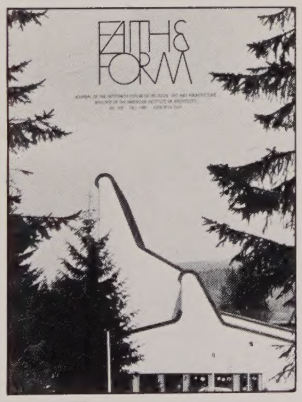

About the Cover:

The United States Army Chapel and Religious Education Building in Wildflecken, Germany, designed by Gunnar Birkerts and Giffels & Lahmeyer, received the Silver Castle Award in recognition of excellence from the U.S. Army Corps of Engineers. See Birkerts' article about the project on page 32. Photograph by Timothy Hursley.

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Manuscript Submission: The editor is pleased to review manuscripts for possible publication. Any subject material relevant to art and architecture is welcome. Text should be double spaced on 8-1/2 by 11 paper. Manuscripts and photos will not be returned unless specifically requested and a return envelope with sufficient postage is included. Good visual material is emphasized.

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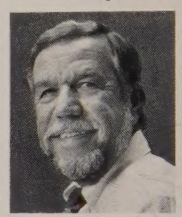
Notes and Comments

A Successful IFRAA Regional Conference

The registration for this May IFRAA Conference on Church-Related Architecture in Baton Rouge, La., far exceeded the projections of the planning committee. Interest and enthusiasm ran high throughout a broad-based program that was cosponsored by the Louisiana Architects Association. The purpose of the seminar was not to make building experts out of lay people but to help them make good decisions for their congregations. Morning speakers emphasized the impact of design on worship, then identified design requirements with good examples. The roles of owner, architect and builder were discussed, as well as that of the stained glass artist. In the afternoons, there were workshops on financing and construction, energy conservation and lighting, and acoustics and sound systems. A moving worship service was written and narrated with the use of architectural slides by Norman Koonce, AIA. Congratulations on the entire project are due to the capable chairman, Ernest E. Verges, AIA and IFRAA regional director.



Ernest Verges, AIA

A Third Forum on Worship, Environment, and the Arts

This September conference sponsored by the Georgetown Center for Liturgy, Spirituality, and the Arts was received with enthusiasm. Its audience was composed of individuals interested in building and/or renovating Catholic churches, and its goal to proclaim the importance of the arts in relation to worship. The keynote address by Msgr. Frederick McManus was entitled, "The Setting for Christian Worship: The Liturgical Brief for the Years After Vatican II." Robert Rambusch, Frank Kacmarcik and John Buscemi participated on a panel, "The State of the Art," and a dozen seminars gave delegates a chance to participate with diversified leadership and subject matter. The three lectures in general session included "Building and Renovation: The Process" by Bill Brown, AIA; "Language of Space" by Marchita Mauck, and "Not on Bread Alone Shall We Live" by Robert Hovda. Cassettes of the speeches are available from The Georgetown Center, 3514 O Street, NW, Washington, DC 20007.

IFRAA *in the* News

The July issue of *Architecture* magazine notes the six 1984 IFRAA Architectural Award winners: "They showed good design while at the same time meeting the liturgical criteria of the users." The San Francisco National AIA Convention committee chose IFRAA display boards of the 1984 awards winners as part of its professional exhibits. The Georgetown Center for Liturgy, Spirituality and the Arts has also invited these winners to be a part of its Form/Reform September Conference.

Scholars Press

Scholars Press has announced publication of three books in the field of religion and the arts:

1. *The Visual Arts and Christianity in America* by John Dillenberger is a comprehensive account of the interrelation of the visual arts and Protestant and Catholic Christianity in American history. A provocative epilogue is included with conclusions about this history as a whole.
2. *The Bible and American Arts and Letters*, edited by Giles Gunn, comprises essays that examine the extent to which the Bible has been a significant factor in poetry, fiction, drama, architecture, music, painting and folk arts.
3. *Art, Literature, and Religion*, Robert Detweiler, editor, is a bold attempt to characterize the "state of the art" in the interdisciplinary study of art (including music and cinema), literature and religion.

For further information, write: Scholars Press Customers Services, PO Box 4869, Hampden Station, Baltimore, MD 21211.

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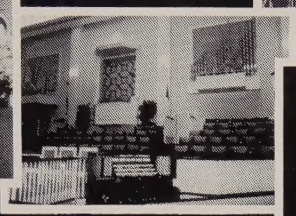
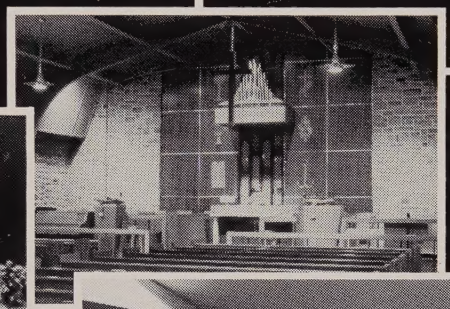
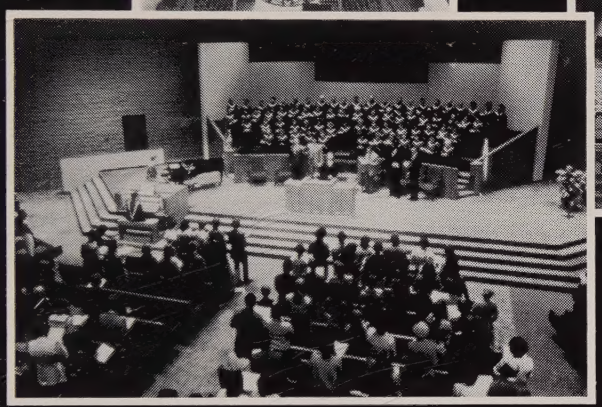
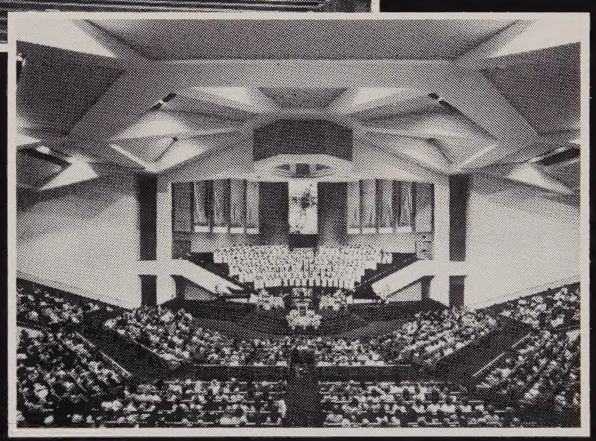
CONGREGATIONS ALL ACROSS AMERICA SING BETTER WITH PIPES.



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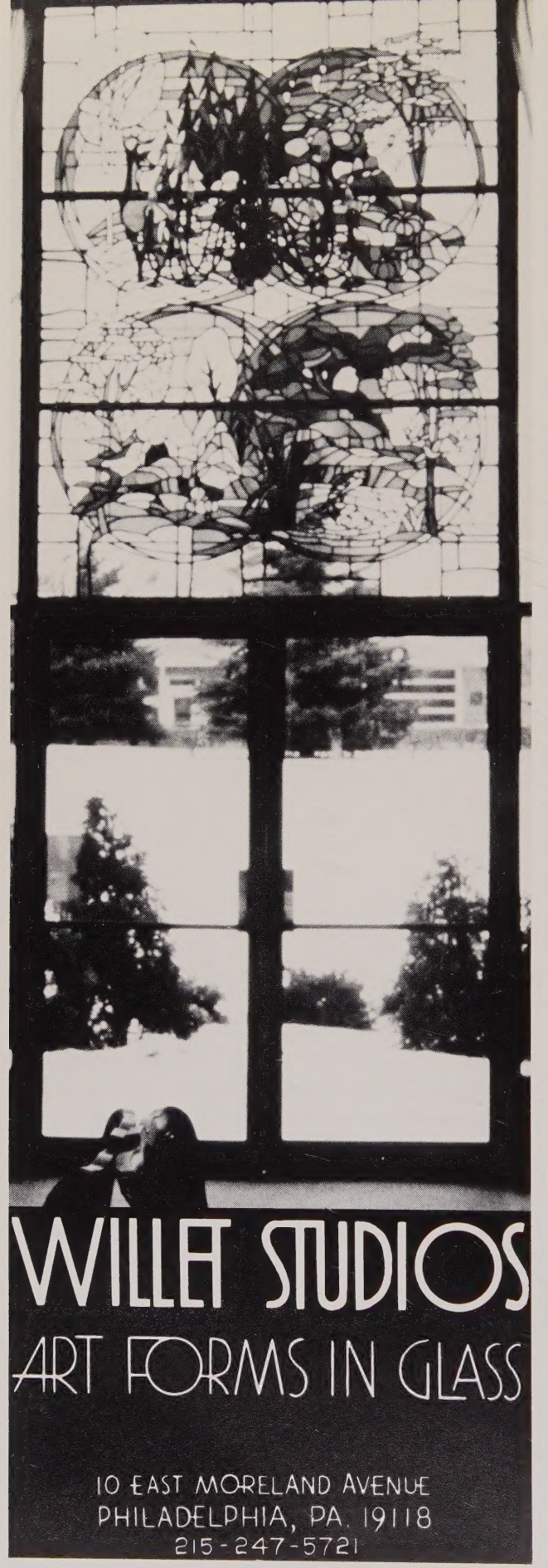

Notes & Comments

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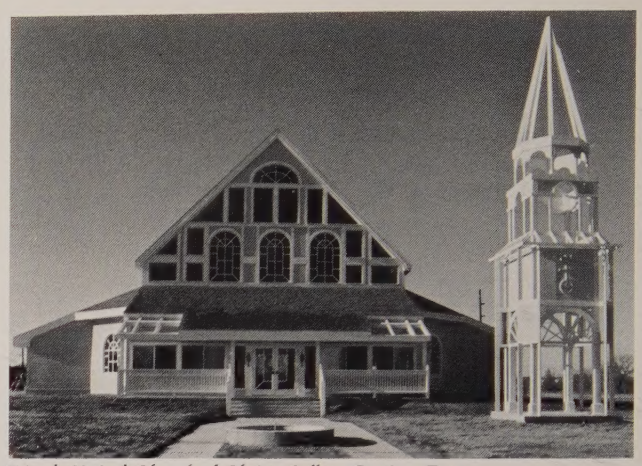

Friends United Church of Christ, College Station, Texas

Excellence in Wood Design

The Texas Forestry Association has chosen the Friends United Church of Christ in College Station as the 1984 outstanding example of the creative use of wood as a design element. The architect, Clovis Heimsath (who has an article in this issue), received a previous award in 1981 from the association for a book entitled, *The Wood Truss Handbook*.

Architecture and Future Television

1. "Pride of Place: Building the American Dream," an eight-part documentary series hosted by noted architect Robert A. M. Stern in the spring of 1986 and presented on Public Broadcasting.

2. "America by Design," a five-part series examining the influence of architecture and design on American lives in the fall of 1986 on PBS. Spiro Kostor, author of *A History of Architecture: Settings and Rituals*, will host the program.

3. "Peter Bohlen, Architecture" is one of eight 15-minute programs in a new series for upper and elementary grades that focuses on artists and the environment. The AIA is participating with partial funding. A teacher's guide is being developed. For information, contact: Linda Maraniss, Center for Environmental Education, 624 Ninth St., NW, Washington, DC. 20001.

The Resources of AIA: Our Partner in Information

IFRAA is an affiliate of the American Institute of Architects and is fortunate to share in the many educational resources it makes available. Issues that loom important in 1985-86 for the architect, engineer, and building committees center in these areas:

1. Asbestos. A White Paper has been prepared because of the increasing health hazards associated with this exposure. It includes a bibliography and other sources of information.

2. Statement regarding proposed tax reform proposals with an analysis of their threats to architects.

3. Booklet, *Selecting Architects and Engineers for Public Building Projects*. The AIA supports the Brooks Act, which provides the gov-

Continued on page 8

First Baptist Church, Orlando, Florida.
Hatfield Halcomb Architects, Dallas, Texas.
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 Continued from page 6

ernment with the ability to procure a/e services *after* selecting a firm through open competition.

4. Booklet, *Federal Tax Incentives for Historic Rehabilitation.*

To obtain materials on these issues, write: American Institute of Architects, 1735 New York Ave, NW, Washington, DC 20006, Attn: Ray Rhinehart.

Treasure Trove

Brendan Gill's A *Fair Land to Build In,* recently published by the Preservation League of New York State, is a delight to be anticipated by anyone interested in art and architecture. There are 440 handsome architectural images that illustrate the diverse traditions and cultures not only of New York State but symbolically of every American community. Farmsteads and factories, courthouses and churches, commercial blocks and magnificent residences are all dramatized through these detailed photographs. The minimal but lyrical text traces an astonishing range of architectural styles and an evolution from wilderness to high civilization. Mr. Gill, a well known writer of short stories, poems and book and film reviews, is a recipient of the New York Governor's Arts Award and a former chairman of the New York Preservation League. The book is available for $7.95 plus $1.50 handling from the Preservation League of New York State, 307 Hamilton Street, Albany, NY 11210 and at local bookstores.

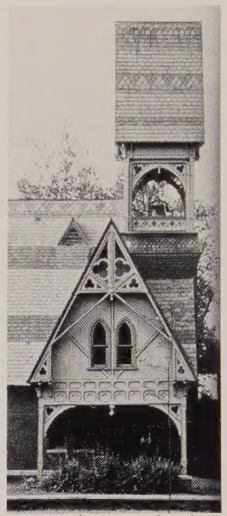


Photo by Jeffrey Gibbs

First Presbyterian Church, Valatie; Ogden and Wright, architects (1878). *From* A Fair Land to Live In.

Pure Pleasure

Alexander Pasternak was a prominent Russian architect and the younger brother of Boris Pasternak, the poet and author of *Doctor Zhivago.* A *Vanished Present* (Harcourt, Brace, Jovanovich) is a beautifully written and evocative memoir of the life of the Pasternak family. With an architect's practiced eye, the author records the streets, squares and people of old Russia before and after the revolution. The book is full of the smells, lights and shadows of a vanished day, with rich memories of houses and markets, carriages, cobbles, and churchbells.

Saint Charles Chapel, Fitzwilliam, N.H

Who would think in looking at the photograph that the chapel is a used mobile home that has been transformed by hard work and less than $2,000 of a small Episcopal New Hampshire congregation? It is in the process of claiming a site granted in 1752 by King George II and set aside for support of the Church of England. In addition to the chapel sanctuary, which can seat 25, the structure includes a small sacristy and a meeting room-classroom combination. St. Charles carries out its worship services, Bible classes and outreach programs under the direction of the rector of St. James Episcopal Church in Keene, some fifteen miles away.

Lay reader, Richard Webber, presides at service in converted mobile-home.

Architecture and Education

In an interview in the Sept./Oct. issue of *Your Church* magazine, Ruth Fryhle discusses "Building for Christian Education." She has recently completed a project for the United Church of Christ to find educational facilities that can serve as models to help congregations improve their learning environments. For further information, contact John Potts, Office of Church Building, 132 West 31st St., N.Y., N.Y. 10001.

Specialization in Design for Islamic Cultures

The Aga Khan recently announced the continuation, extension and expansion of a joint program for Islamic architecture at Harvard University and the Massachusetts Institute of Technology. The new grant is for approximately $900,000 per year for the next ten years. A Master's degree in Design for Islamic Cultures, the first of its kind in the West, will be established. The program's broad goals are to improve education, encourage research, and to develop information resources.

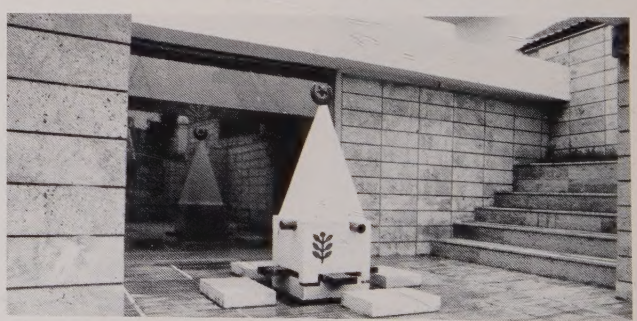


Photo by I. Betant/AKAA

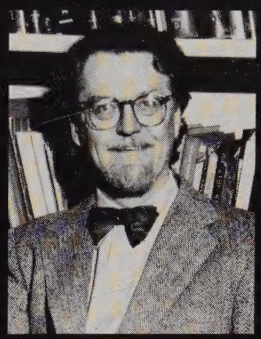
Sherefudin's White Mosque, Visoko, Yugoslavia, winner of the 1983 Aga Khan Award for Architecture

IFRAA Past President Honored

The Northern Virginia Chapter of the American Institute of Architects presented its highest service award to Michael F. LeMay, AIA, IFRAA's immediate past president, for outstanding service to the chapter and profession of architecture.

Rambusch adds 86 years of experience, sensitivity, understanding and art to honor a new Cathedral.

Viggo Bech Rambusch, Chairman and President of Rambusch ...working closely with the rector of the Cathedral and the architect, helped to create a fitting environment for the new Diocese of Palm Beach, Florida. The consecration of St. Ignatius Loyola and its elevation to a Cathedral, represents a significant high point in Rambusch's three generation association with the Church. The Rambusch art and craft studios designed and fabricated with stained and etched glass, wood, metal, stone and fabric...to fulfill liturgical needs...with skill, sensitivity and a historic understanding.



St. Ignatius Loyola Cathedral,
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Harold Seckinger, A.I.A., Architect;
Mario Locsin, Senior Designer/Rambusch;

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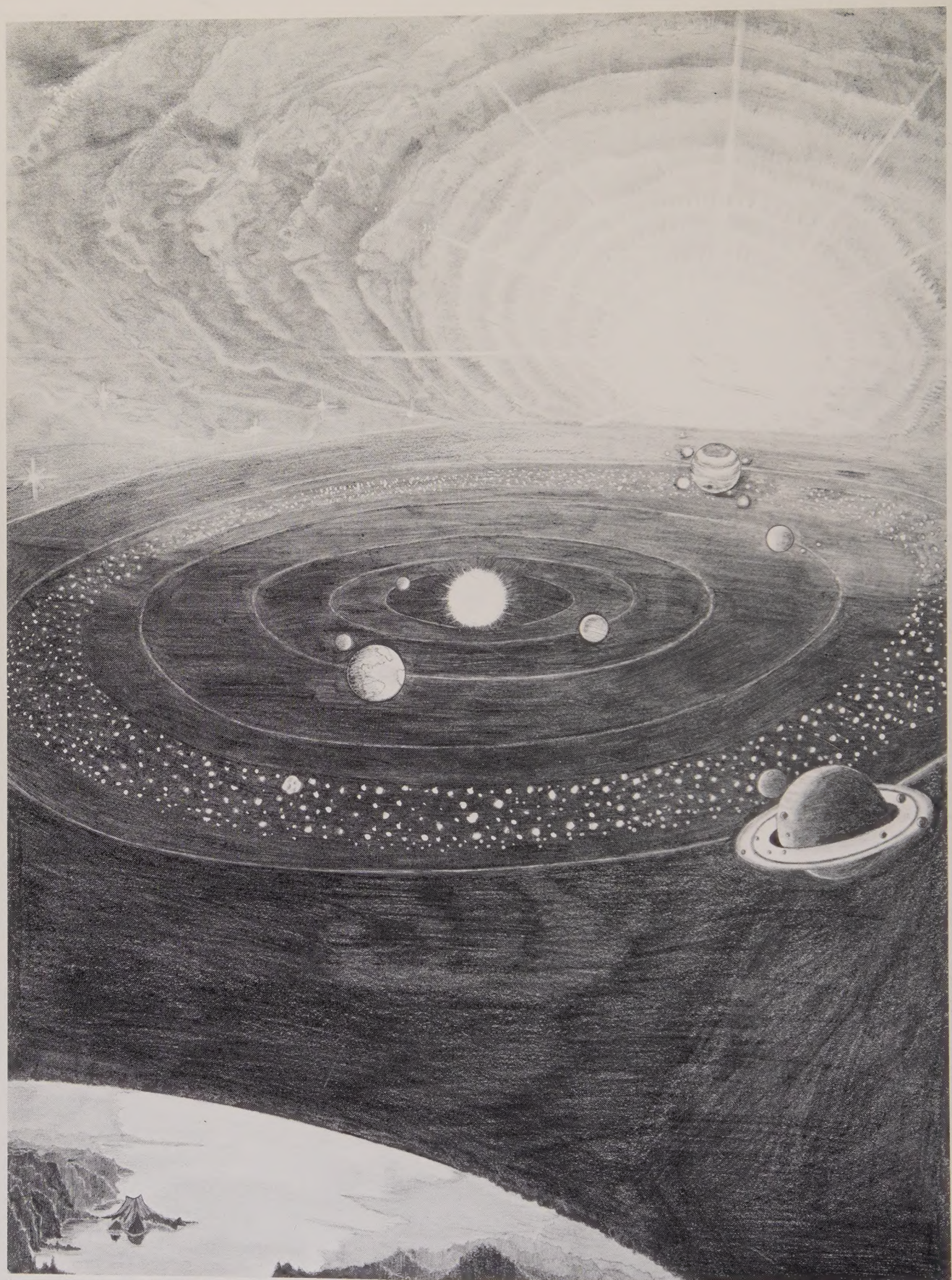
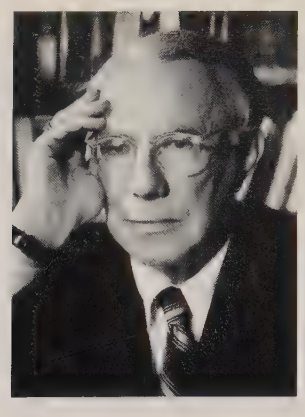


"Dawn of the Cosmos," by Cecilia Lewis Kausel, dramatizes the beginning of matter as emanating from a light source representing spiritual energy. Kausel created this drawing for Dr. Tillich's article (opposite); she also illustrated the fall 1983 cover of FAITH & FORM.

DOMESTIC ARCHITECTURE, SPACE AND TIME



by Paul Tillich

Protestant theologian Paul Tillich originally gave this address in 1933 at the dedication of a house. It later appeared in *Bangilde*, the magazine of the League of German Architects.

Dear Friends:
We wish to speak of the dwelling-house, of space, and time. Three concepts are bound together in this theme, two of which, space and time, are the results of the highest kind of philosophical abstraction, while the third, the dwelling-house, characterizes a concrete reality very near to life. The connecting of the one with the others appears to contradict the dignity and remoteness of a life of philosophy, but it contradicts only one that is remote from life, not philosophy itself.

Contrary to usual opinion, while philosophy does have to do with the general and universal, the abstract and Beyond, it is not a matter of speculation remaining unto itself or of a mystical death of meaning, but rather an interpretation of the things nearest to us, of the concrete, of that which concerns our daily life. For in the nearest things to us, in that which concerns the everyday, in the apparently trivial thing something metaphysical hides; the here and now is the place where our existence must find an interpretation, if we can find an interpretation at all. Thus, the dwelling-house and its space is something near to us, something everyday, something insignificant in contrast to the great things. It is the first and most immediate relationship that man has to space. In it he creates for himself a space which is his space. And only on the basis of his space can he push forward into space at all, and especially into infinite space.

If therefore a community of men, as so often happens, has transformed a house into a space for its community life, it is meaningful to dedicate such a space through words which will characterize the dwelling-house in its significance for our human existence, for our possession and our creation of space. If a strong architectonic desire has created this space, if it has been formed on the basis of an idea, both in concept and detail, then it deserves to be intellectually apprehended and organized into overlapping, extensive contexts. We shall speak of space however, because even though our standing in space is always a standing in time, they are always in a struggle and our consideration of space will still lead us to the consideration of time and with it the limits of all creation of space.

I.

Space is no thing, and it is also no receptacle for which things exist, but rather space is the manner in which the living comes into existence. Space is co-powerfulness, the owner of the living to create space for itself. There is no space in itself, but rather as many kinds of space as there are ways of life becoming reality. Everything living and everything human is recognizable in its way of dealing with space.

The first, immediately illuminating a characteristic of space, is its duality of existence alongside something else. One thing fills a space and another occupies another. They stand beside each other and one excludes the other. One moves the other through pressure and impact, from the outside: there is no inner unity of space. The power to create/arrange space has, in this instance, the character of filling space, of giving impenetrability, of standing for itself, of warding off everything severe and in opposition. In the space filling power of a wall of rock the powerfulness of the existing can be seen on this level. The impenetrability and severity of every wall of a house gives witness to the same being. We call it the being of the inorganic, a filling of space and confrontation that gives protection to the highest forms by a self-arranging of space.

This method of a rigid space-filling is dissolved in vegetative space, in the being of plants, where the fulfillment is raised to an unfolding or a development. Instead of standing beside each other, there is an advancing beyond self, an extension that never becomes a separation. There is a sympathetic unity binding all aspects of the unfolded plant being. Space is, as it were concentrated on one point, and yet again is enfolded in a latitude. The life process of growth signifies mutual penetration of everything that stands at the same time beside another. It is not another structure in the same space, but rather another space which the living thing creates or arranges.

The same holds true for the next stage which is the space of movement, the sphere of the animal. The fulfillment and unfolding remain, but there is added movement. The animal anticipates the remote space toward which it will move. It breaks through the vegetative bondage to the soil, and advances into spaces which do not limit. Simultaneously a counter-longing for its original space

forms and develops. Just so, the higher animal is thrown through space into birth, pushed out from the original, limiting space of the mother's womb, and he too has an impulse to return to the encompassing, supporting nest.

Man experiences space on all these levels. Beyond this he goes in a double direction, externally and internally. Externally he overcomes the limited movement-space to which the animal, even the widely ranging animal, remains bound. Man breaks through every space-limitation and creates for himself infinite space, according to the power of his being. Space in itself is neither finite nor infinite. A finite or infinite space as *things* are nonsensical absurdities. Space is infinite because the human way of arranging/creating it is the breaking through of every finite limit. Space is finite because man in time sets up a limited space in which he remains and from which he advances into the infinite. Finitude and infinitude of space are a polarity in which the power of human existence comes to expression and in which man creates space and with it existence.

With this external projection is bound an inner one. Man is the creature that is born with nothing given, but pushes out to something he proposes. Not content with what is, he has a picture of what should be; he sketches and shapes the world he finds and creates a second one. He creates consciously and gives shape to a space of his own. Thus the polarity which we have already observed in the animal comes into play and is decisive in the making of a space. On one side there is the desire to define himself as much as possible apart from infinite space, and to make his home into a den or mother womb. With this there is the wish to take up into this delimited space images of plant and animal existence on his walls and furniture. On the other hand, he is aware of a desire to detach himself from the limited space into an infinite space, to absorb only that which is connected to the *meaning* of the dwelling, and to open himself to the space of the whole world and its forms. He recognizes that this infinite space carries within it all forms like the light and the wind which may stream into his limited space but remain "out there." It is this desire that no longer wishes to go back to the nest, but instead longs to explore the infinite.

Because the arrangement of space is the way in which man, like every living thing comes into being there is a primordial sacredness to space. The aspect of space which has the character of the original supporting space is "soil." The house gods are the gods of the soil upon which the house stands, and often blood sacrifice is made to them. In this respect the house resembles the bondage to the soil characteristic of plant existence. But not only is one's own house space-limiting but so also is the neighbor's, the city in whose precinct a house stands, the landscape, the nation and its soil. They all participate in the sacredness of the space which gives us existence. But the space-creating power of man goes even beyond these limits and seeks to transform the earth to the unified use of humanity and thus detach itself from every individual soil. With that however, human space creation becomes the creation of growing spaces for living in the progress of time, and time becomes powerful over space.

Thus do we see today a struggle of space and time, and not their unity in a fulfilled present.

II.

The space of mere fulfillment has no other relation to time than that it endures in time. More inward certainly, is the relation of vegetative space to time, because plant life has within it youth, maturity, and old age as pregnant elements of its life process. In the animal kingdom the future is anticipated and the past echoes after. In its inner consciousness both expectation and memory converge and create a similar three-fold character of time. Finally it is in man that both space and time become infinite. Man anticipates the future in unlimited remoteness. The coming of millions of years signifies for him just as little an end of time as the past millions represent a beginning. He transcends every form-creation and transforms it into something new, and in the new the limit of the old is broken through.

To be sure, time cannot dissolve space. Time wins the present only in space; the present is the space-near modus of time. In the present and only here do time and space unite. Whoever has space has the present, and whoever has found no space is without life room and must live into the future in order to create out of it a present for himself. But if he has space, that is, if he has found the present, the power of time drives him on into the future, for the future is the modus through which time becomes "time." To arrange means to create the future, and to tear it out of the present, out of space. We must again and again leave the space that surrounds us for the sake of time, for the sake of the future, just as we had to leave it when we were born. The word to Abraham that commanded him to get out from his living space into an unknown future, is symbolic for human existence in general. It is symbolic also, and especially, for the spiritual and social struggle of our time. Its deepest ground is this; that the gods, the powers of limited space, resist being torn out to grow into a more encompassing space, into a space of humanity and into a future in which human existence fulfills itself anew. It is as if the advance which humanity has made in the direction of unified space has irritated the demons of the soil and once again driven them to their highest unfolding of energies. Thus do we see today a struggle of space and time, and not their unity in a fulfilled present.

Domestic architecture seeks to give a present in a limited space. Every house is a fulfillment of human self-created space, of human longing for the present. But every house is also a danger: the danger that sacrifices will be offered to the divinities of limited space that do not belong to them. We must therefore work hard to create spaces that equalize the tension between the desire to limit, to define or protect oneself from an all-absorbing infinity, *and* the desire to go out of the supporting, limiting nest into infinity.

Permission to publish this article in its edited version has been given by Robert C. Kimball, *executor of* Dr. Tillich's *literary estate.*

A DESIGN STUDIO IN RELIGIOUS ARCHITECTURE - Part Two

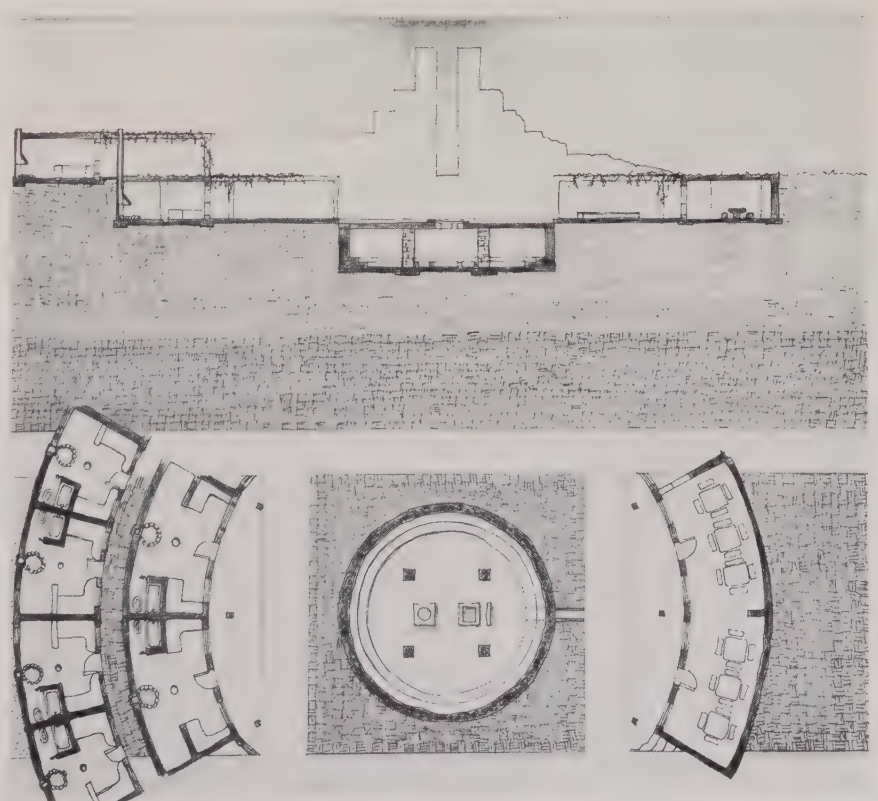
by Stanley Ira Hallet

In part I on the "Temples Quarter," an architectural design studio for graduate students at the University of Utah, I presented projects related to familiar religious groups (spring 1985 *Faith & Form*). However, many students challenged the traditional boundaries of the studio and explored problems addressing ceremonies and rituals of a more anthropological nature and certain rites common to many religious practices.

During the first days of the design studio, the proposed topics kept redefining the parameters of the assignment. The Masonic Order was one such example. When proposed, the class was stunned. Masonry did not fit the generally accepted religious mold. Yet, when asked to explain, the student described the "secret" rites and ceremonies of Masonry and shared with the class a history of temples, artifacts and symbols that told the Masonic story. While Masonry is not a religion, its architecture, style, decoration and symbolism reflect strong philosophical beliefs, concepts and attitudes. Although not illustrated here, the resulting project drew from many sources and was one of the few inspired from the "Gate or Way" exercise described in the first article. Even the landscape was organized to make certain Masonic points. For example, the entrance to a suburban Masonic temple was marked by a gradual ordering of trees from a natural setting to a geometrical one, a reflection of Masonry's goal to search for and recognize man-made order. The trees became columns, each pair forming a series of gates climbing a long, stepped entrance. At each landing, the pair of columns was spanned by elements drawn from Western Civilization's major architectural periods; first an Egyptian lintel, then a Doric one with carved entablature, followed by a Gothic arch, a Renaissance lintel and finally a steel "I" beam.

Since Masonry models its interior ritual rooms on similar historic periods (excepting Modernism), the outside gates foretold inside stories. While the entrance steps corresponded to the elaborate steps required of initiation and promotion in the society, the complex story continued inside. Like a vast movie studio, the temple exterior was simple and monotonous, a giant house of set designs, one Gothic, another Egyptian, a third executed in the Renaissance style, all following the underlying geometries laid out by early Masons.

Similar relationships of history, ritual and architecture were explored in lesser-known religions, especially those found in tribal societies. In the Four Corners area of Utah, Colorado, Arizona and New Mexico, a retreat center for the study of Anasazi culture was proposed. Historic



Retreat and Anasazi study center. Bart Mills.

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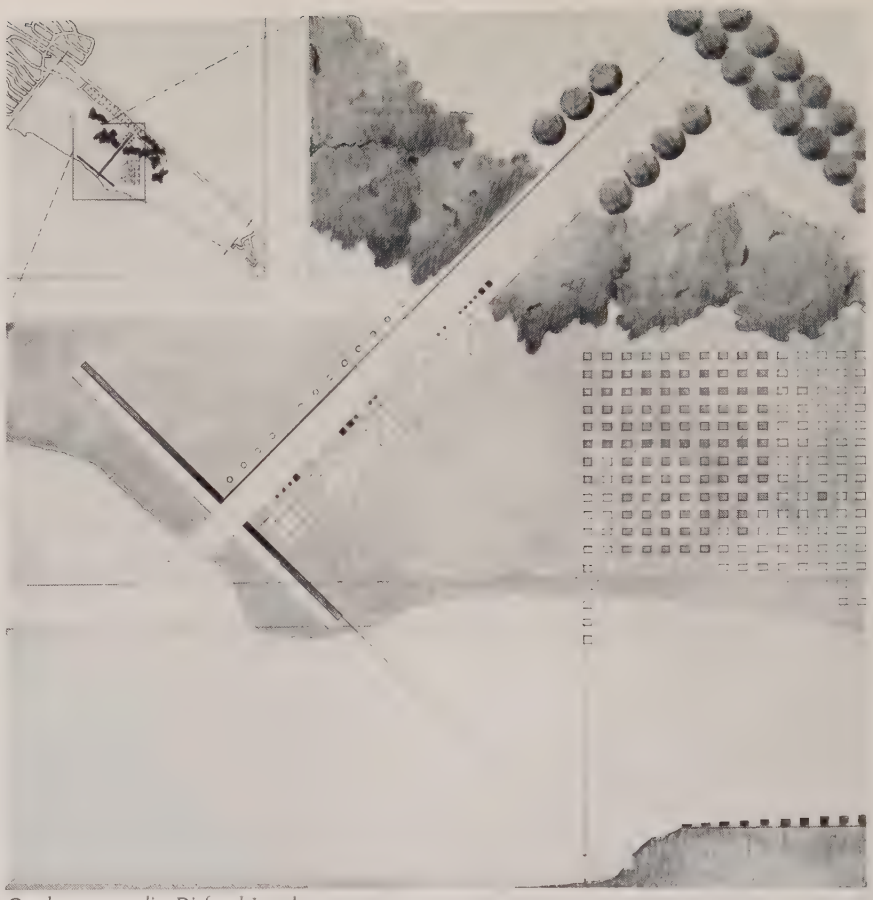
studies emphasized fortress-like villages built into cliffs or on desert plateaus in the form of well-defined semicircles opening to the sun. In the latter case, densely packed housing surrounded the ceremonial kivas, circular rooms dug into the ground. The kiva rituals evoked the earthly origins of the people and their gods.

Correspondingly, the proposed retreat center is earth-sheltered, its walls radiate out into the landscape following the solstice lines, forming in plan a cosmograph of the Anasazi's view of the world. During the fall and spring equinox, the sun slices through the stepped and curved entrance gate, a reminder of the Anasazi's celebration of the sun as it rises each day to share its energy with the tribe.

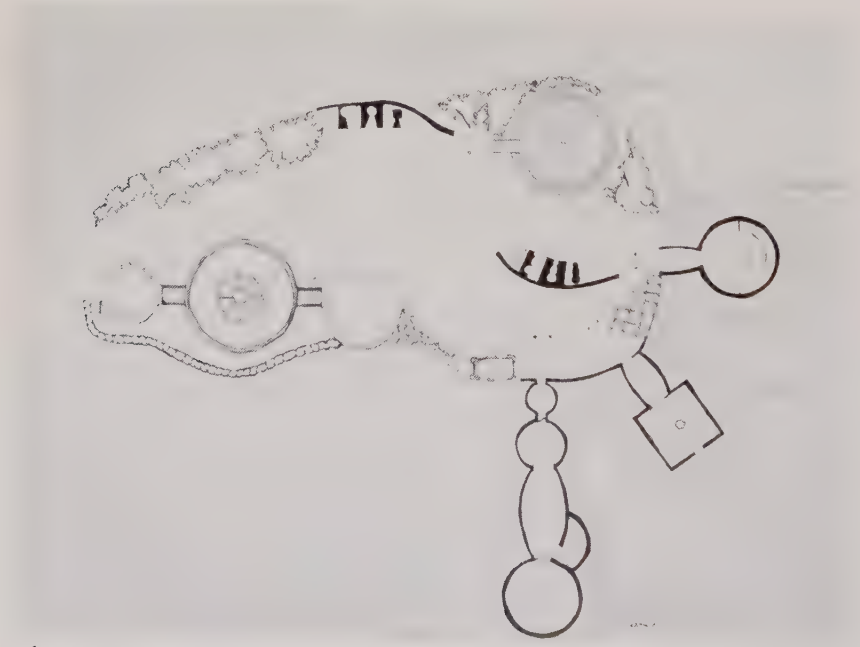
In the Center for the Study of Anasazi Culture, one senses the bold relationship of architectural form to the surrounding high deserts. The defining of territory or settlement of land becomes a religious act, much as it was in ancient times.

The Eskimos of Alaska elicit similar imagery, but this time more raw in character. A student eagerly explored the every-day rites and ceremonies that take place in underground huts and sweat houses. Antler bones, entrances carved out of earth, and narrow underground tunnels led to dark, hot, womb-like rooms. The tribal esthetics frustrated the student. Unable to weld the traditional mud of her clients, she first proposed modern rectilinear buildings to hold their artifacts, the typical natural-history-museum approach to cultural study centers.



Garden necropolis. Richard Loosle.

However, with continued struggle, the Eskimo materials, forms and attitudes began to invade her work. In the last weeks of design studio, a camp-like complex appeared to grow out of the skeleton remains of both animal and building. Curiously, when viewed from above, the assemblage looks like the rotting head of a wild animal. At ground level, the camp was dug into the landscape, burrowing into nearby slopes. Earth was formed into walls, stones were gathered to define edges, the group gathered in the wilderness. Crossed bones defined gateways to a sequence of libraries, meeting rooms and study areas. The result is timeless. Walls that are built in one place only crumble in another. Earth is removed in one area, only to be piled up elsewhere. The flat plane of the gathering space is leveled out of the soft undulations of the surrounding landscape. The camp becomes an architecture of change, yet appears to stand still forever.



Eskimo complex. Care Heller.

Similar questions of timelessness and change led others to examine the issues of burial and cemeteries. A garden necropolis was perched on cliffs overlooking the California coast and orchestrated a collection of experiences. Arrival, procession, prayer and burial are at times formal, one sequence often clashing with another, or informal, bordering on the organic. White crypts for the dead are cov-

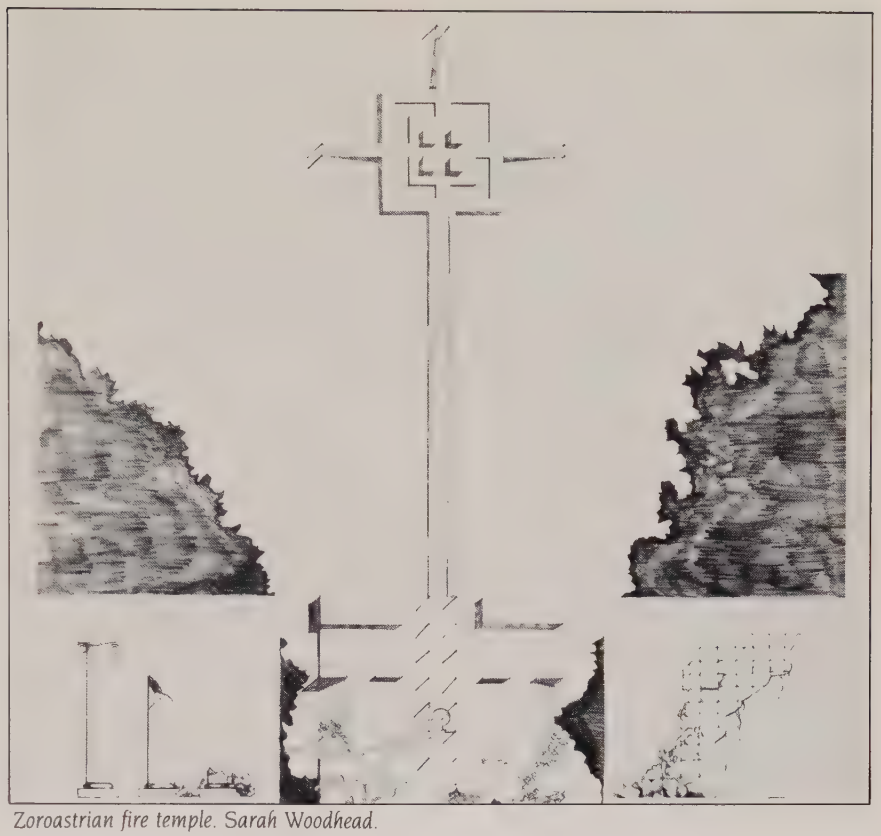
ered with clinging vines as individual caskets are interred in crisp, monolithic blocks.

As the cemetery receives the dead and the green plants envelop the tombs, the field of burial crypts changes from one of hard, white edges to soft green textures. A series of chapels, built to different stages of enclosure, suggest the seasons of the year and those of man. At the end of a path, thick burial walls contain ashen remains. The question of death, the reminder and celebration of life, surrounds the visitor as nature is entwined with man's works. In the cemetery-garden, we witness the never-ending paradox of growth and change, all within the greater context of eternal stillness.

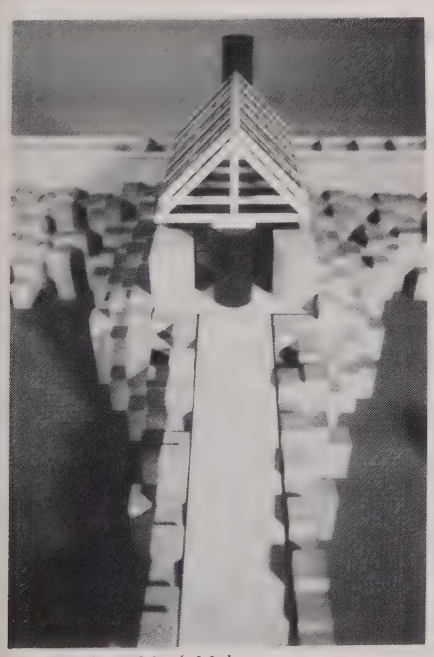
No one project evoked more initial resistance than a crematorium. For many of us in the studio, the association of cremation and the Holocaust proved too powerful an image to overcome. However, with more people choosing the ritual of cremation to honor their dead, the subject demanded support. What began as reluctant advice soon became a fascinating and moving discussion of the meaning of death and the need to honor it. For one student, the finality of death was marked by the crematorium smoke pile rising into the sky.

Just as the shovelful of earth is placed upon the coffin to wed body and earth together, the column of smoke winding its way upwards also joins the body to the sky. For many, death is but one gate along a journey of many stages.

This idea of journey became the quintessential design thread woven through the proposed crematorium. A processional walk passed through a grove representing the garden of life. Paths split to climb steps cut into the rock of a man-made mountain. At the top, a wall contained gates. One major gate led to the chapel and crematorium. Other gates became windows to a landscape beyond. A long wall defined the edge of the crematorium and sheltered the ashes of the dead. The four enclosing walls of the complex defined a garden of plants, trees and building. From gate to forest, from mountain steps to vertical chimney, the eye moves upward, following a friend's path from birth through life, to death and beyond.



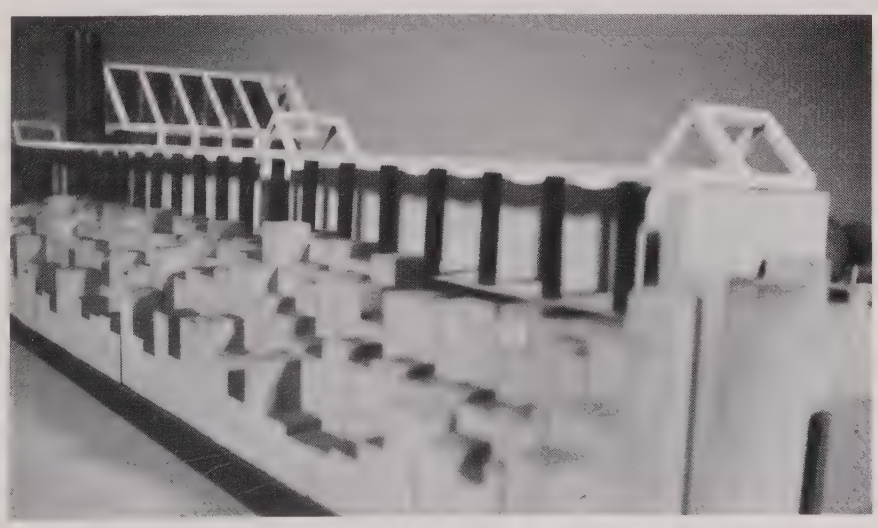
Zoroastrian fire temple. Sarah Woodhead.



Crematorium. Mark Molen.

The Mandala

Unbeknownst to their designers, two projects shared an organizational principle most ancient in practice. The mandala, or geometry of nine squares, recalls a cosmological diagram depicting earth, the four elements and heaven above. It also forms the underlying geometry of the earliest Zoroastrian fire temples. Fascinated by the architectural symbolism of these early rites, one student explored



the historic tenets of Zoroastrianism.

She proposed a pilgrimage site and study center in the high mountains of India for both local practicants and the world body of followers. A Zoroastrian fire temple became the final destination of pilgrimage. The fire temple was sited high on a hillside, where she interpreted the four elements of fire, wind, water and earth in a pristine Euclidian manner. However, below the altar and its long axial walkway, the study center was contrasted. The center was laid out on a perfect, square platform, again delineated by the ancient mandala geometry, but now slowly eroding into the mountain landscape. Today's elements of fire, wind, water and earth eat away at man's precious, "eternal" monuments until the stone platform, in its own time, dissolves into the surrounding forests.

Mandala, Take Two

The evolution of the mandala form affected many religious rites and building organizations, but its effect on Islamic prayer and garden spaces was extraordinary. In a proposed center for Islamic studies in India, the rich language of pattern evolved into further complexities and variations based upon the early mandala forms. Still derivative of these ancient forms, these later organizations explored the negative spaces of the mandala and exploded the geometric plan of the fire temple into its thirteenth- to fourteenth-century counterpart, the expansive yet rigidly enclosed garden tomb.

Similar to these paradisical gardens, the four gates of the study center mark the four cardinal directions. Four massive walls surround a lush and beautiful garden court. In its center the sky is reflected in a still pool of water, making a vertical axis connecting the plane of the earth with the heavens above. Around the "earthly paradise" of the courtyard, the living and working spaces required of the study center are carved out of massive perimeter walls. From the layout of the garden to the decorative assemblage of tile and carpets, the ancient geometries are forever repeated, a constant reminder of the mandala's presence.

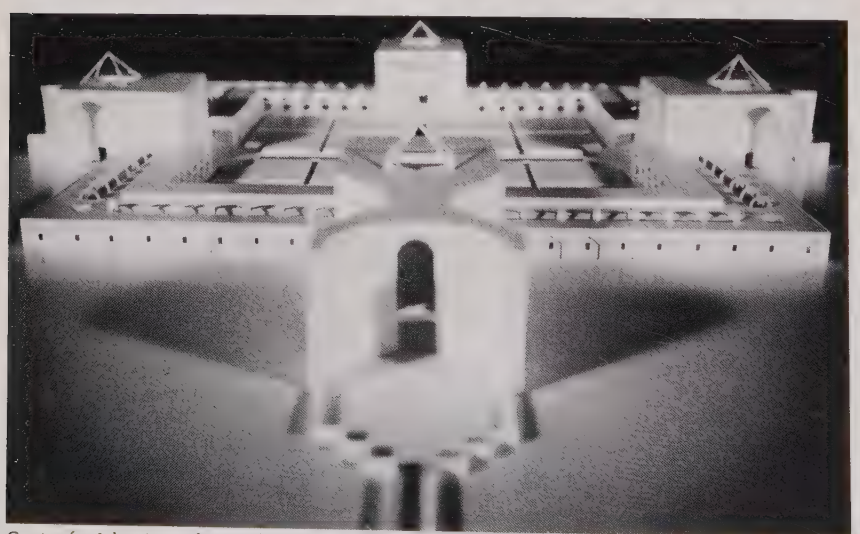
As an architect and teacher, one cannot help but be affected by the religious chess game played with the students of this design studio. The ideas, impressions and approaches discussed soon find expression in my own work. Recently, a small Episcopal parish, St. Stephen's, asked my partner, Robert Hermanson, and me to design a chapel and retreat center for its growing congregation. We were taken into a flat, characterless site in the middle of Salt Lake City's carnivorous suburbs and asked to perform, on a limited budget, architectural miracles.

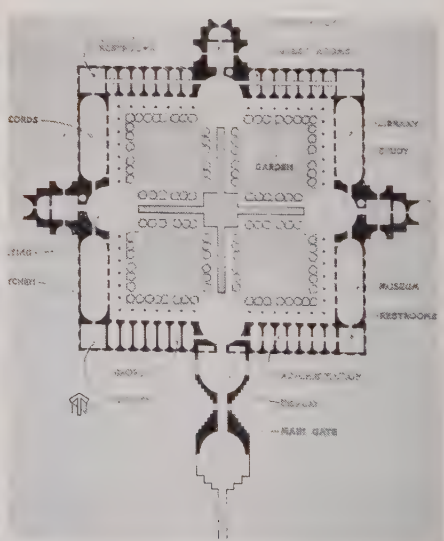
Located just under airport flight paths, close to commuter highways and abutting school parking lots, the site seemed an unlikely place of retreat. Equally frustrating, the parish's existing meeting hall, an ungainly concrete block building, appeared to have been recently dropped onto the middle of the site.

The parish challenged us to transform the site into a gracious place for retreat, meditation, prayer and community gathering. Our considered advice was to plant a garden. Since their complex building program would undoubtedly take many years to complete, we felt that time was best spent growing a garden of escape, meditation, prayer and gathering. Amongst the garden spaces, future buildings would be inserted.

The conceptual plan proposes a series of parallel zones, each addressing specific area needs while leading the participant deeper and deeper into the seclusion of the retreat center. The parking court, the first zone, welcomes the visitor. One side is defined by gardens, plants and walls. The other side is defined by a row of windmills to provide power and disguise neighboring noises. After parking one traverses the gardens of the second agricultural zone where flowers and vegetables are grown for both the parish and neighbors. There, a small "field" of grain reminds us of the miracle of Christ and the everyday miracle of growth. Finally one penetrates the third zone, a greenhouse, or the winter home of agriculture, provider of food and energy for the buildings that follow.

The building zone contains both indoor rooms for prayer, gathering or education, and outdoor rooms that hold gar-





Center for Islamic studies, India. Mark Nielson.

Episcopal chapel and retreat center (St. Stephens, Salt Lake City). Stanley Ira Hallet.

den courts. The first court is lush in vegetation, a shaded retreat for meditation. A second court, more public in spirit, provides a place for gathering. The third court is intended for play, filled with children.

These community spaces act as gates to the sacred grove, a central commons rich in metaphor. This grove space is divided into green lawns and rows of carefully planted trees. The irregular dividing line between "woods" and "countryside" follows the spring solstice line. The two landscapes are joined by a precise waterway.

This channel of water leads us from the open lawn into dark groves. Cutting through the groves of trees, one arrives at a clearing. There, a shelter for baptism provides a place for poetry or meditation. Its glass roof collects rain water and funnels it into a baptismal font below. Finally, the water overflows into the irrigation channel. A columbarium wall lifts up the earth to surround the sacred basin. Memories of life and death are shared in one single place.

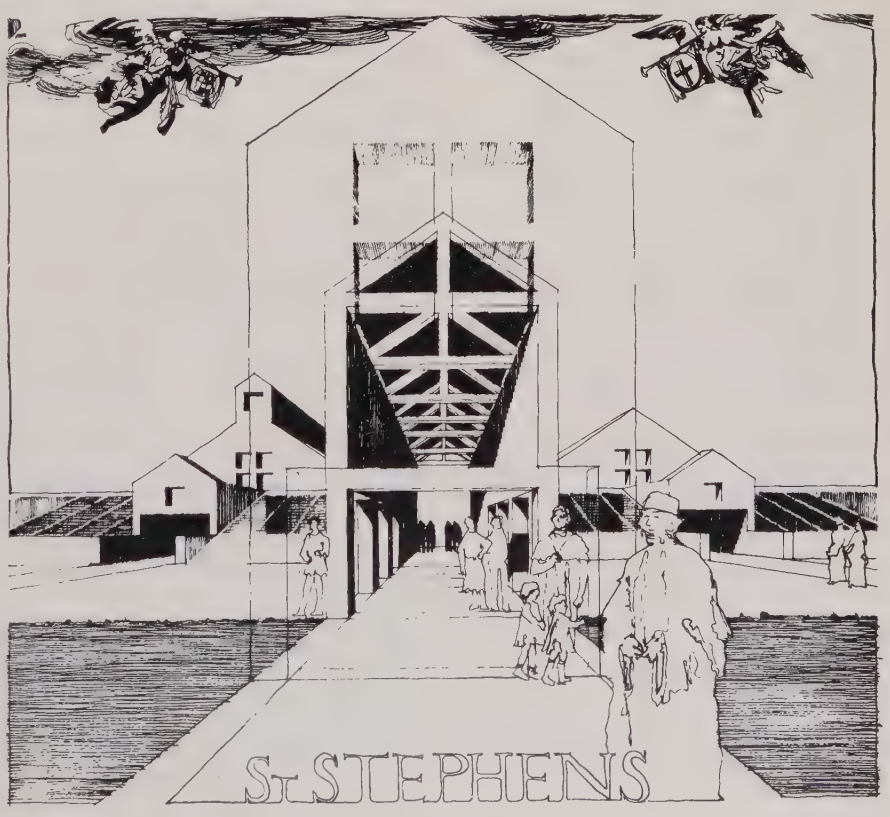
Finally, a zone of monastic retreat spaces defines the far edge of the grove. There, sleeping cells surround courts for meditation or study.

With each successive zone, the visitor becomes further removed for prayer and retreat. Three acres in a suburb become an inner world of forests, agricultural fields and groves, of shelters, workshops and patio courts, for forty minutes of prayer or forty days of retreat. This month the parish will plant trees; next year they will start the foundations.

After sharing with you the many words and images of our studio, final thoughts on the role of religious architecture are perhaps anticlimactic. For our design students, one overriding goal was shared: to respect the past works of a culture and to reach forward in time to design new works. The problem of context was not to fill in an empty lot along a street of Queen Anne rowhouses with another Queen Anne variant, nor to reflect the building to the left and the building to the right on one's own facade. Rather, the question of context became the answer to the question, What should follow? The very concept of following implying continuity. While still expressing the "collective being" or "memory" of the religious client, the designer was free to make use of his or her own talents. Community "crit-ins" or consensus by committee was now considered insufficient. Instead, the temples studio was an attempt to look back to a jury of ancestors and forward to a jury of grandchildren.

As we look around us today, recent religious structures appear to fall into three categories. The first group reveals a dismal attempt to be modern, claiming new forms and technologies, each vying for exaggerated attention. This parade of churches does little to inspire us, and most often tears congregations apart in their insecure attempts to construct with their architects abstract and egotistical ideas.

A second, far greater group of buildings seeks with humility the banal, the "builder's look"—lackluster containers of spaces intended for multiuse activities, but in the end of little use. In contrast a far smaller group, worthy of much encouragement, seeks to make religious space that borrows from the past, makes it their own, and steps gingerly into the future. They recognize and celebrate that the role of architecture has always been to preserve, to pass on stories of precedents, to make real the legends and beliefs of people, and when this has been achieved, to build new forms for the future, forms that remember.



IMAGING THE HOLY

by Joseph Cardinal Bernardin

In attempting to speak of God, the ultimate reality and ground of all being, philosophers and theologians have traditionally employed the three fundamental concepts of truth, goodness and beauty. These are three pathways by which we strive to understand God.

The pathway of truth is a challenging one because we encounter great complexity in our attempts to sort out truth from falsehood. The pathway of goodness often evades us because, for all our best efforts, our shortcomings and limitations consistently trip us up.

However, the third pathway—that of beauty—is a more gentle one. It leads us to behold the Creator's touch revealed in nature as well as in the masterpieces of human art and creativity. It is often the pathway of delight, gentleness and awe.

In a sense, then, artists may dedicate themselves to the service of beauty, not simply for its own sake, but also as a revelation of the more profound and ultimate beauty of God. This, in turn, raises the question of *religious* art.

Works of art are not "religious" simply because they are produced by persons who are believers or who publicly identify themselves with an organized religion. A person of faith may be a mediocre artist! Nor is art automatically "religious" because it deals with a religious subject. Many so-called "religious" artifacts manifest shoddy workmanship, saccharine spirituality and superficial religiosity!

What, then, is *authentically* religious art? I will approach the subject from two angles: the concept of the "holy" and the rather tempestuous history of the relationship between art and religion.

Any truly religious art must somehow grow out of human experience that is immersed in this tension of opposites.

In *The Idea of the Holy*, Rudolf Otto defines "the holy" as the *mysterium tremens et fascinans*. This Latin phrase is packed with meaning but somewhat difficult to translate. Let us examine each of the words.

Mysterium basically means mystery—something profound and baffling. *Mysterium* is a feeling that we are swimming in very deep water, that we are in over our heads—that we are in touch with the deepest aspects of our lives, our identity, our destiny, our mission and meaning—that we are encountering ultimately important realities.

Tremens means terrifying, awesome. Precisely because we are in touch with the depths of life, we naturally are afraid. We are tempted to draw back, to run away, to seek whatever is safe, secure and familiar. We are uneasy. Otto describes it as eerie, spine-tingling, hair-raising, uncanny—not in the sense of a child's terror at a horror movie but in the sense of an adult who catches a glimpse of the ultimacy of life and of life's reality.

Fascinans means fascinating, absorbing, enchanting. The reason we don't flee from something authentically holy is precisely because it is simultaneously terrifying and fascinating. We find ourselves suspended between fear and delight. As C.S. Lewis said, we find ourselves "surprised by joy." The pain is that of birth, not death. Our spirits are stretched and expanded almost to the point of breaking because of the beauty and wonder of it all.

I suspect that authentically religious

His Eminence JOSEPH BERNARDIN *is cardinal of the Archdiocese of Chicago, Illinois.*

art is created by men and women who have experienced the *mysterium tremens et fascinans* at a significant depth. By means of their artistic creativity they are able to wrestle, struggle, entice and coax their materials into an expression—almost an epiphany or revelation—of that experience so that others might share it.

A non-artist may react to a work of religious art by musing: "Yes, this expresses something very deep which I myself have experienced. The artist and I have been there together, but the artist can express in art what I cannot articulate."

My second approach to defining authentically religious art relies upon a necessarily sketchy and somewhat oversimplified history of the tension between religion and art. The two poles of the tension are these: on the one hand, art has often served the human race as a revelation of God to us. On the other hand, art has often been perceived as a distraction from God.

In the first place, art has been one of the most effective ways of leading us closer to God. In the second place, art has, by its very beauty, seduced us. It has tempted us to believe, "This is so beautiful, so enchanting that I need go no further." Works of art can become idols.

We see this tension reflected in the Catholic tradition during the High Middle Ages, specifically in the debate between the Benedictines and the Cistercians about church architecture and decoration. The Benedictines built churches filled with wonderful statues, stained glass windows, tapestries, crucifixes—art works of all kinds, designed to reflect the wondrous beauty and variety of the Creator. By contrast, the Cistercians built very simple monasteries, devoid of extraneous decorations so that the monks might focus on the one thing necessary—the ultimate simplicity of God.

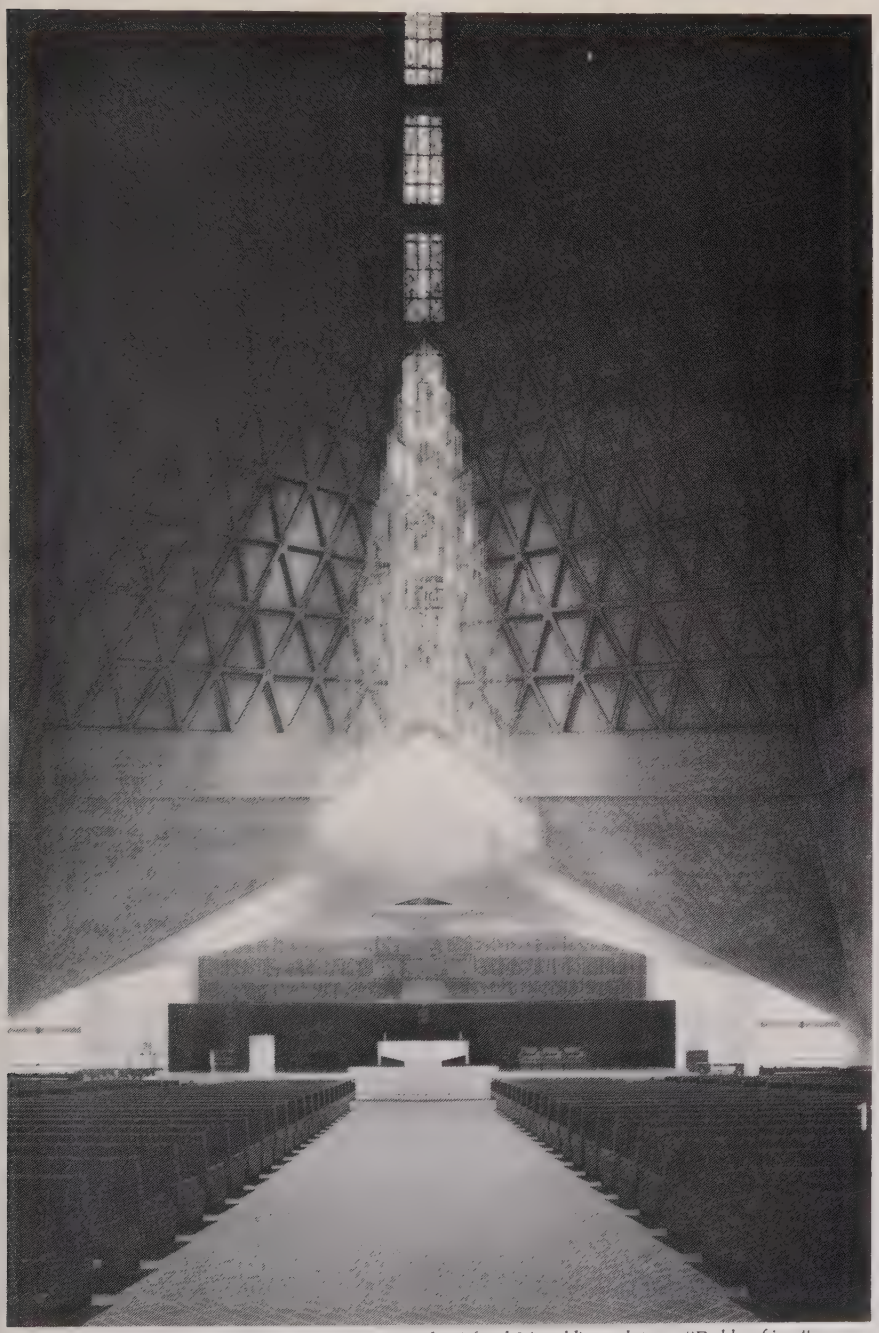
We see a similar tension reflected in other religions. The awesome extravagance of Buddhist and Hindu temples in Asia, as well as Mayan, Aztec and Incan temples in Latin America, is a manifestation of the impulse to employ art as a doorway to the divine.

On the other hand, Judaism and Islam prohibit graven images. The dramatic content of this tension is evident in the conversion of Istanbul's Santa Sophia from a Christian church to a Muslim mosque. In the history of Christianity there have also been instances of iconoclasm—at certain periods in the Orthodox Church and among the Calvinists during the Reformation. Epidemics of religious zeal have destroyed many magnificent works of art because these were viewed as idolatrous.

What does this tension teach us about religious art? One might think that the iconoclast aspect of religious history would be enough to discourage any self-respecting artist from having anything to do with religious institutions! Nevertheless, I raise the issue of this conflict because any truly religious art must somehow grow out of human experience that is immersed in this tension of opposites.

The artist who seeks to express something about God or about the deepest part of human reality must be willing to walk the tightrope between the terrifying and the fascinating, between the exuberant complexity of God and God's ultimate simplicity, between God's revelation of self in creation and God's transcendence.

Being immersed in that tension of opposites is at the heart of religious experience. Artists serve the religious community by their unique ability to express and share their struggle with that reality. It is a rare but exceptionally valuable service to one's brothers and sisters.



Interior, St. Mary's Cathedral, San Francisco, with Richard Lippold's sculpture, "Baldacchino."

BUILDING COMMITTEES, PROJECT MANAGEMENT AND RISK

by Samuel Y. Harris, P.E.

Building committees are asked to do many things, among them manage the current building project. Yet few members of the building committee are likely to be experienced project managers when they accept the responsibility of serving on the committee. This article is a discussion of the elements of project management as practiced by building committees.

Project management is a broad field in professional practice, but one definition is the process of balancing competing interests to achieve maximum benefit from the given resources. Project managers strive to produce the best building possible within set limits. The goal is the same whether the project manager is an individual or a committee and regardless of the size of the project, from small alterations to wholly new buildings.

When the building committee begins its work, it represents many issues within the congregation and in the general community. There are questions about budgets, schedules and programs that will be accommodated, as well as size and appearance. Each interest has its priorities, just as each member of the committee has a preference. While the questions are numerous, they generally fall into four categories:

1. Cost—how much money the building will cost to build, to maintain and to operate.

2. Time—how soon the building will be available for use.

3. Quality—how much detail will be included in the building. As a factor in the project, quality includes materials, workmanship, durability and efficiency.

4. Scope—how many people and programs will be accommodated in the new building—the size of the project.

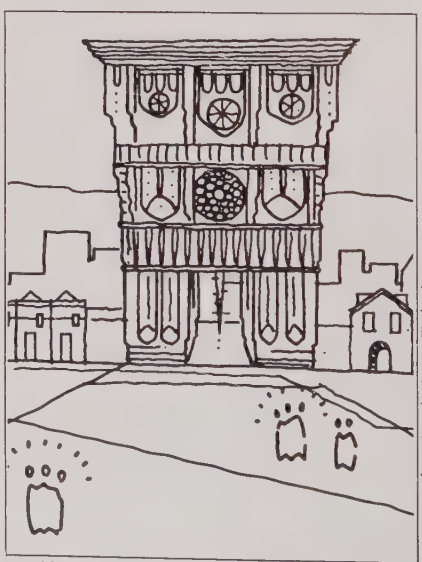
These factors are related to each other. For example, bigger buildings usually take longer to complete and cost more to build, so that the scope of the project affects both schedule and cost. The relationship of these four factors can be expressed as an equation:

$$\text{COST} \times \text{TIME} = \text{QUALITY} \times \text{SCOPE}$$

Throughout the life of the project, the building committee as project manager is responsible for maintaining the equilibrium of the equation—for keeping the factors in balance. If the committee chooses to increase the classroom space for the Sunday school, the cost of the project will increase or the construction period may be extended; often an increase in scope has both effects. If, however, the committee cannot increase the budget or lengthen the time, then standards of quality must be lowered in order to accommodate the larger classroom. When the equation remains balanced, the building committee's work is largely complete. Construction may not be finished, but the difficult planning decisions will have been made.

With an ideal project, the building committee begins its work with a great deal of information about each factor, and each factor is completely flexible. In most cases, however, the committee has more questions than answers and more wishes than facts, and the resources available to most building committees are limited. The lack of complete, accurate information and the practical limits on each factor contribute to the risk associated with the entire project. Risk becomes a fifth factor of the project, and management of risk becomes another of the building committee's responsibilities.

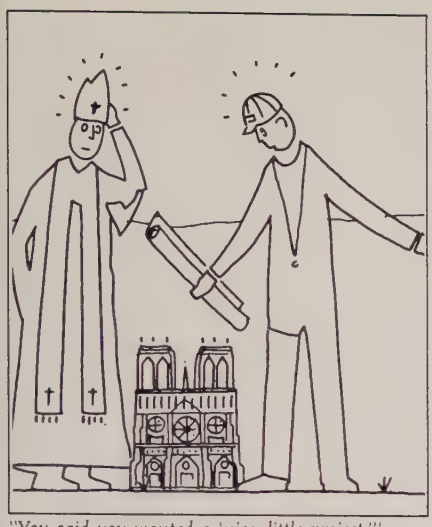
Risk is the building committee's (and ultimately the congregation's) willing-



Drawings and captions by James Timberlake

"Hold up on the roof. The drawings were upside down."

SAMUEL Y. HARRIS *is a partner in the Philadelphia architectural firm of Kieran, Timberlake and Harris. He is both an architect and engineer, and teaches graduate courses at the University of Pennsylvania in materials conservation and building technology in the Historic Preservation Program. Captions and cartoons are by his partner James Timberlake, who spent a year as a Fellow at the American Academy in Rome investigating the development of Italian architectural drawings. His present responsibilities are for architectural and graphic design, especially those with historical implications.*



"You said you wanted a 'nice, little project.'"

ness to assume the costs of uncertainty. Exposure comes from the uncertainty of some factors, such as underground rock conditions or precise estimates of the costs of materials. The limits of exposure are rather tight in many cases; if the bill comes in higher than the amount of funds available, there may not be a way of raising additional money.

In general, church building committees deal with high-risk projects in an environment where risk is relatively intolerable. An alternative situation could be a bank planning an additional branch office. From experience, the bank knows fairly well what the branch will cost in both dollars and time, and the officers may be willing to gamble a bit on the outcome of the project. The bank faces lower risks and can accept the exposure.

To help manage risk, the building committee can enlist outside advisors. It can retain a professional advisor to answer questions about the project process and some questions about the particular project. Many architects offer this as a part of basic design services, and others offer it as a separate service. The committee could also consider the resources of an experienced builder or contractor.

A contractor can serve the building committee as an advisor; he can further serve the committee by assuming the bulk of the risk. Both the owner and the builder sign the construction contract. The contract is a statement that the builder agrees to construct a project of defined scope and quality according to the terms of price and schedule. In turn, the building committee, representing the owner of the project, agrees to pay the builder the stated price and allows the builder the specified length of time to complete the project. In other words, the building committee assumes responsibility for COST × TIME, and the contractor for QUALITY × SCOPE. This is the essence of the contract.

Building Committee		*Contractor*
COST × TIME	=	QUALITY × SCOPE

The contract defines the balance of the equation. The left side is the obligation of the building committee, and the right side is the obligation of the builder. The terms of the contract define the factors; the method used to develop the contract determines the assignment of risk.

There are different kinds of construction contracts, but each version specifies which party assumes the risk associated with the project. If the owner accepts the risk, the builder agrees to build exactly the combination of QUALITY × SCOPE defined by the architect's drawings and specifications. The owner agrees to pay additional charges for unforeseen conditions, for inaccuracies in the architect's drawings and specifications and for changes in the scope of the project.

If the contractor finds more underground rock than tests indicated and the estimate allowed, the owner pays extra charges for blasting the rock out.

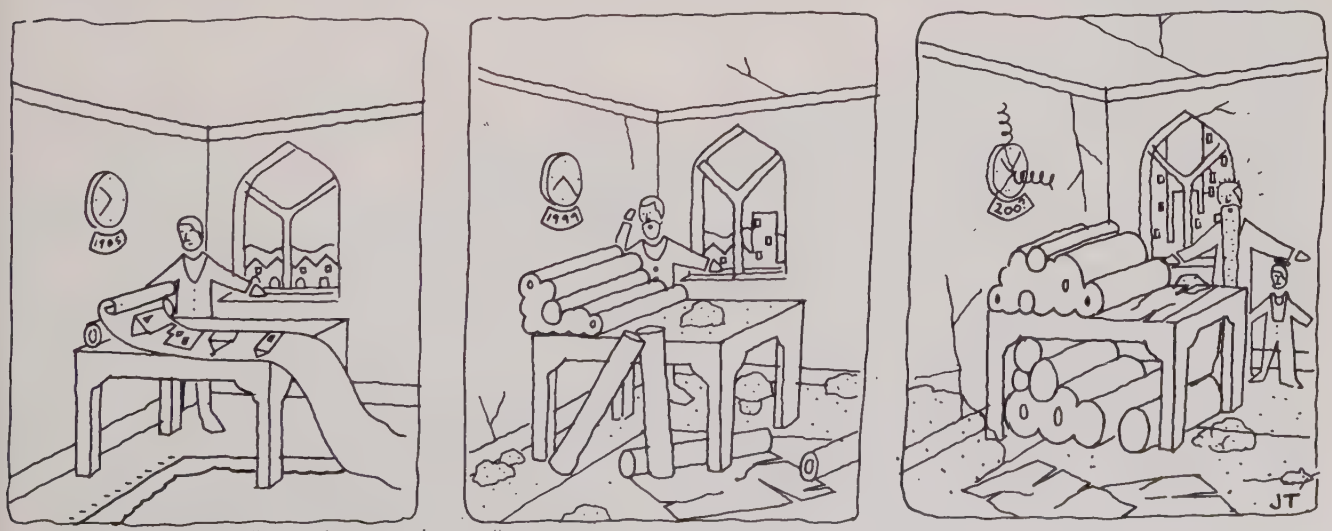
If the architect's documents are unclear about the doorknob to use, the owner pays any additional charge for substituting the preferred doorknob for the contractor's choice.

If the building committee decides during construction to have the door hinged on the other side, the owner pays any additional charges resulting from that change.

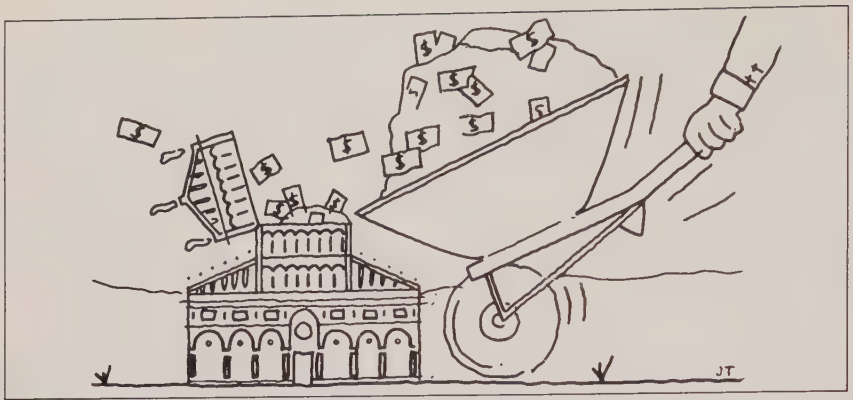
Adjustments made after the contract is signed may reduce the cost of the project; if there is less rock to excavate, the cost may be lower than anticipated. However, in accepting the risk of the project, the owner accepts the responsibility for higher costs if they occur. When the owner accepts the risk, the project equation becomes:

$$\frac{\text{COST} \times \text{TIME}}{\text{RISK}} = \text{QUALITY} \times \text{SCOPE}$$

This type of contract is usually based on competitive bidding. In this situation, the owner knows exactly what to build, and the design is thoroughly documented by drawings and specifications prepared by the architect and other consultants. The building committee distributes the documents to several contractors and asks the contractors to quote a price. Each bidder quotes the



"The Building Committee will meet almost any day now."



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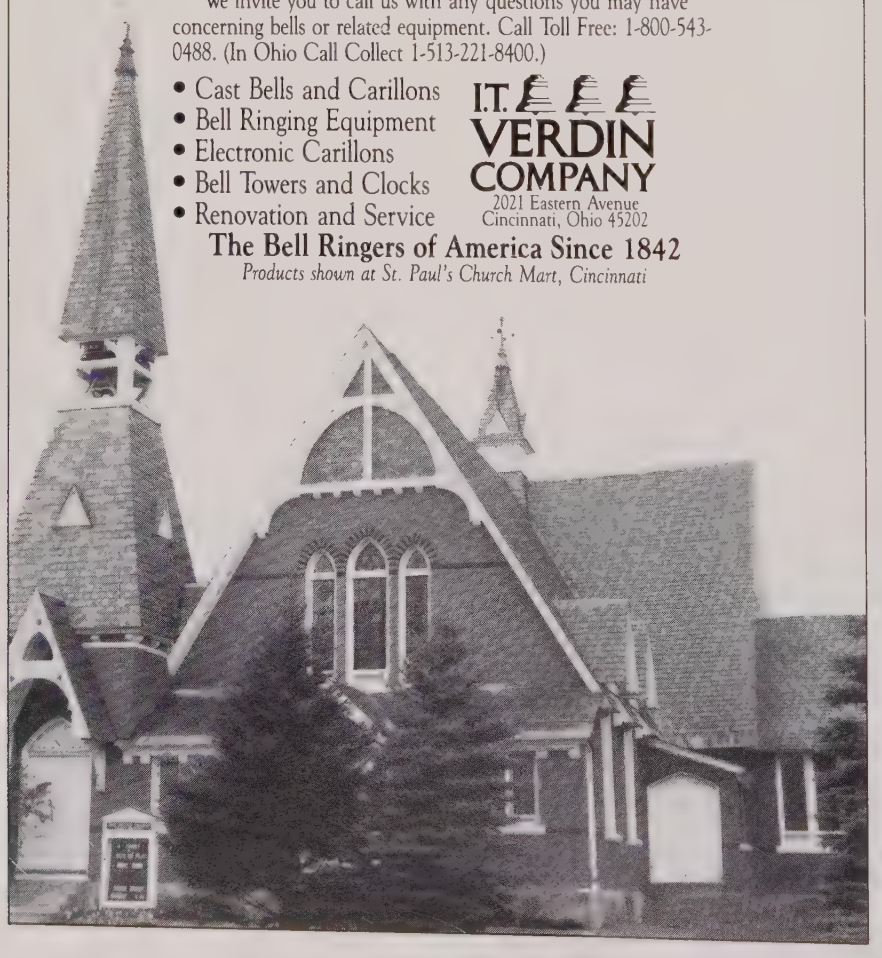


guaranteed minimum price and schedule he can deliver. The committee usually signs a contract with the firm submitting the lowest price, since the QUALITY and SCOPE are identical for all bidders.

The building committee's alternative is to let the contractor assume the risk of the project. In this situation, the contract is developed through negotiation. Fairly early in its work the building committee selects the contractor for the project, even if the design is still schematic. The contractor can be selected from interviews, by a process similar to selecting architects. While the building committee resolves questions of QUALITY, SCOPE, TIME and COST, it works with the contractor to clarify the questions and supply the answers. Based on his experience, the contractor helps the committee limit risks by eliminating some of the unknowns; his business is to know the general cost of buildings and how long they take to complete. The project equation in this model is:

$$\text{COST} \times \text{TIME} = \text{RISK} (\text{QUALITY} \times \text{SCOPE})$$

When the contract is developed through negotiation, the terms of price and schedule change from minimum conditions stated in a competitive bid to guaranteed maximum conditions. The contractor assumes the exposure for unanticipated conditions and inaccuracies in the project documentation. Even when the contract is negotiated, the contractor does not absorb the risk of changes in scope made after the design is complete. These costs remain the obligation of the building committee. The distinction between a change in scope and an inaccuracy in the drawings is at times subtle. The committee's role as project manager continues during the construction cycle as these distinctions are resolved.

Of course, there is no such thing as a contract that both releases the owner from all risk and produces a building at the least possible price. In managing the project, each building committee has the choice of a competitively bid contract or a negotiated contract. The choice is between assuming the risk or assigning risk to the contractor.

There are many techniques for managing projects and their risks. The general variables and their relationships as described here are common to all projects. The building committee that understands these relationships and their limits will create a better project.

Practically Speaking

An Attempt to Deal with the Nuts & Bolts of Church Buildings and Their Furnishings

by **Herman Hassinger**

The basic building block of the Gothic Cathedral was the stone block. In its largest size it determined the module, size and shape of the great Medieval churches.

Today, we have similar materials that limit our designs and form our proportions. In our simpler churches, the limiting module is usually the 2 × 4 stud, its 16″ spacing, and the 4′ × 8′ sheet of plywood. This article is about a component (moveable platform) that is determined by available materials.

The smaller church, usually a new mission, must opt, for reasons of necessity, for flexible worship space. To change a social hall or gymnasium into a worship space requires a platform for a table altar and worship focus. The platform may also require a communion rail depending on the congregation's tradition.

A reasonable size for such a platform is about 12′ × 16′. To make the platform flexible, it must be broken down into components that are small enough to be easily handled but large enough to be stable and have good scale.

We've found that a 4′ × 8′ sheet of plywood cut into thirds is a good workable size for platform components (32″ × 48″). This allows a variety of arrangements 12′ × 16′, 13′4″ × 20″, 16′ × 16′ and many others. For some liturgies, the arrangement can easily be tee-shaped and an additional layer can make a 4′ × 4′ pedestal for a clergy chair for the presiding minister.

HERMAN HASSINGER, FAIA, *is the founding principal of* Herman Hassinger Architects *of Moorestown, N. J. The firm has designed over 100 churches and received over 20 AIA design awards for its work.*

The 32″ × 48″ basic box is constructed about 8″ high. We recess the structural sides and trim the sides with an articulated skirt of oak or birch. The articulation allows us to carpet the top like a stair tread, and the pile thickness takes up any irregularity or unevenness when the boxes are joined to make a platform.

The pile thickness can allow 3/8″ steel bar supports for a communion rail to be placed between platform sections without having to increase the spacing.

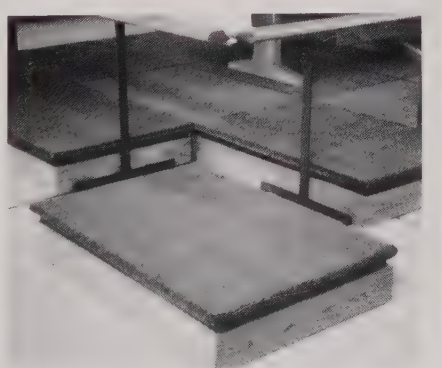
The typical box section has sufficient weight to stay together as a platform without any need for physical connections. A 1″ black nylon perimeter strap could be used in the articulation "notch" to tie the platform together, but we've found that this detail was unnecessary on all but the most polished floors.

The communion rail has to be designed to fit within the 32″ × 48″ module. We find 3/8″ × 2″ bar stock works for the upright and the rail. An oak cap finishes off the rail. The base of the upright should be a 10″ circle of 1/8″ plate, which is held down by the weight of the adjacent box sections.

A corner joint is necessary to get rigidity. This can be done several ways.

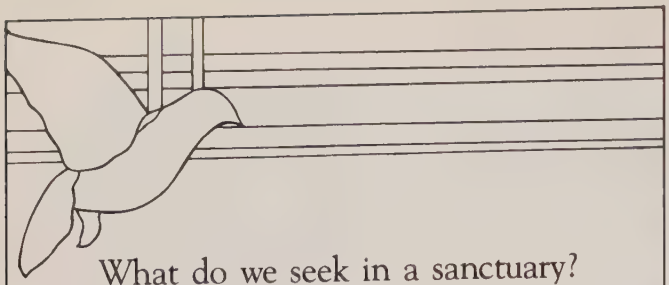
With a little ingenuity there are unlimited ways this flexible platform system can be used.

A 12′ × 16′ platform used in a Lutheran Church.



Same church with corner box removed to show construction. Note that all boxes are interchangeable in any position.

Corner detail showing railing upright and base. A better detail is to have a round plate base that strips under adjacent boxes.



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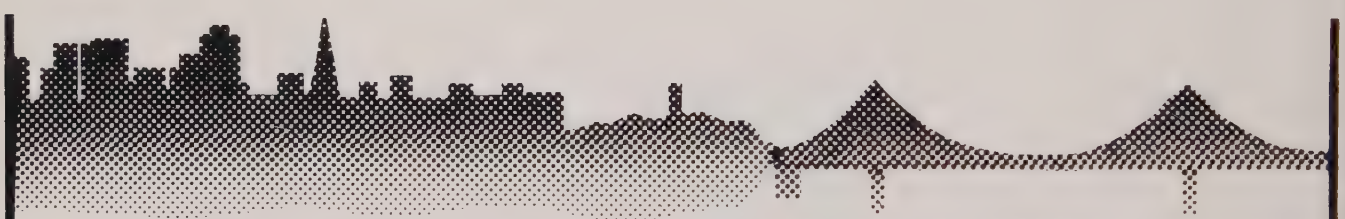

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DESIGN.

Developing a public awareness and appreciation of design will be the focus of the AIA Forum for Architecture in 1985. State and local chapters are being encouraged to sponsor programs that provide information about architecture and the design process to the public.

To IFRAA, the congregation represents the public. We believe that both the architect and the congregation should be parts of the design process and willing to invest in quality that will make a difference in the presentation of form. To do this, both must understand the language of the other.

How does an architect think? What are the creative steps through which the mind moves from preliminary design concepts to a constructed model?

In the following pages, five architects make an individual statement about the design process, either in a general discussion or in reference to a specific project:

Project 1: "Designing A Village Church"—*Nicholas D. Davis*

Project 2: "The Design of a Chapel Facility"—*Gunnar Birkerts*

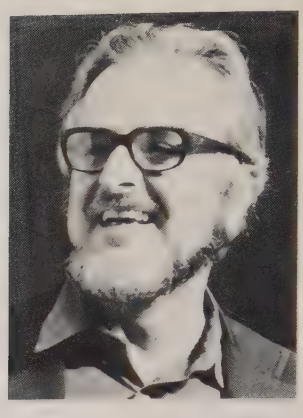
Project 3: "Creating Visual Resonance"—*Clovis Heimsath and Maryann Heimsath*

Project 4: "Subject Matter and Design"—*Thomas Gordon Smith*

Project 5: "The Design Process and Master Planning"—*Hatfield Halcomb Architects*

Architects who read *Faith & Form* are invited to submit design statements on their own creative process.

DESIGNING A VILLAGE CHURCH



by Nicholas D. Davis

"A man should learn to detect and watch that gleam of light which flashes across his mind from within, more than the lustre of the firmament of bards and sages."—*Ralph Waldo Emerson*

How do we design a place where we know that men, women and children will gather for the next hundred years or more, each with his own patterns of loves, sorrows, fears and needs; where each will stand to celebrate, to mourn, to sort out conflicts, to try to accept the unacceptable, to find strength, meaning, and direction for his life? How indeed, unless we reflect upon the basic questions of both faith and design? The answers are not easy, but the architect must try. This is the story of one attempt.

The United Methodist Congregation in the tiny village of Loachapoka, Alabama, needed a new sanctuary to seat 100. As a Methodist myself, I already knew the vast range of beliefs that even a small congregation can encompass. We are the epitome of theological pluralism, even in rural areas, and this can leave the architect groping for a foothold as he faces a tremendous responsibility.

As a study focusing on the workings of an architect's thoughts and feelings during the design process, this article may seem to omit the importance of the building committee and congregation during that process. Obviously, very little could have emerged from these efforts without the wisdom, dedication,and open-mindedness of these clients. From the beginning, they established a spirit of productive interaction which is extremely rare in such situations, and for this they deserve the highest of praise.

Happily, the site plan was easy since the new sanctuary was to be attached to an existing Sunday school building. I took cardboard cutouts and a drawing of existing conditions to an early meeting with the building committee. Together we explored alternatives and agreed on a location. Spaces for all functions except worship were already provided in the existing building, which left a very simple but vague program for the new sanctuary. They wanted an economical, compact

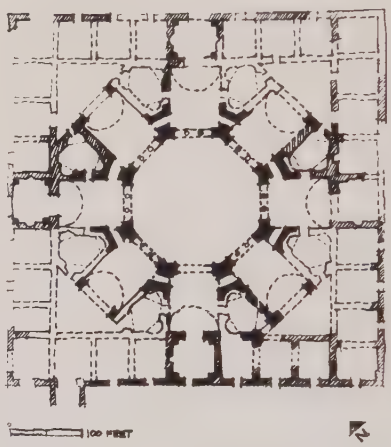


Fig. 1. *Hierapolis Palace, early 5th century*

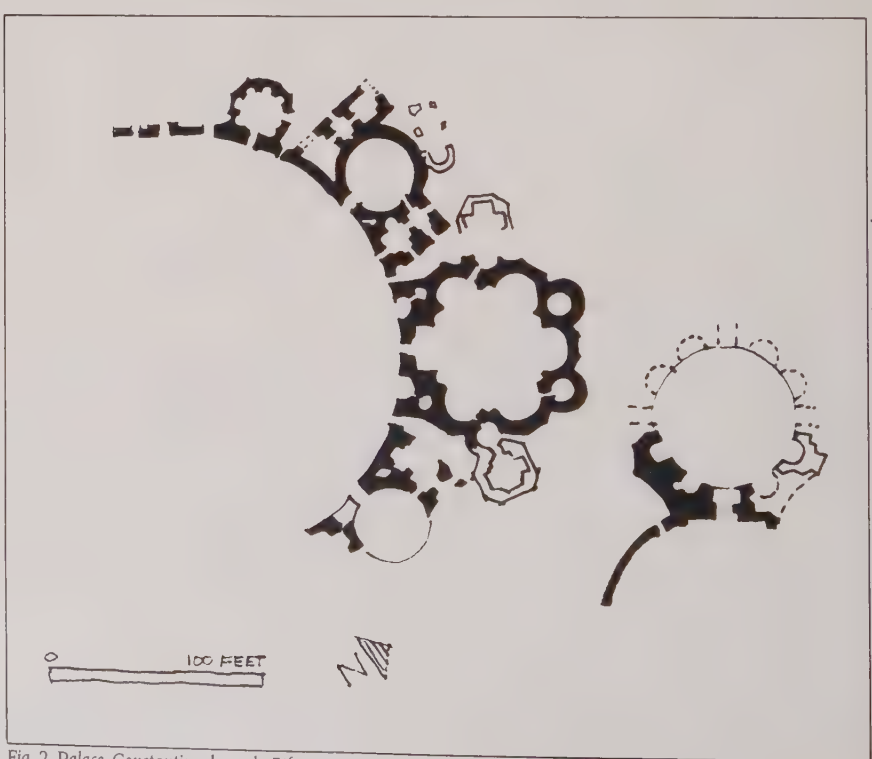


Fig. 2. *Palace, Constantinople, early 5th century*

All drawings and photos are by Nicholas Davis, unless otherwise noted.

NICHOLAS DAVIS *is alumni professor of architecture at Auburn University and has his own private practice in Auburn, Alabama.*

building that would serve occasionally as a community center. Beyond this there were few constraints.

How does one begin the design process? I believe with Emerson that it is our inmost thoughts which are important, especially in the creative act, and that too often we dismiss these thoughts because they are our own. Luckily, Emerson does not say we must be original, but he does say that there is a selective pattern of likes and dislikes built into each of us, and that we must respect and work within that pattern, influenced by those things which speak to us.

"Great works of art have no more affecting lesson for us than this. They teach us to abide by our spontaneous impression with good-humored inflexibility . . ." For, as Emerson continues,

"Not for nothing one face, one character, one fact makes much impression on us and another none. This sculpture in the memory is not without pre-established harmony."

It seemed to me that unity was perhaps the most important function the new sanctuary could perform, and the geometries of unity immediately came to mind. I remembered the round and octagonal churches and tombs that grew as Christianity grew in the fourth and fifth centuries (Figs. 1, 2). They seem, almost, to have assembled themselves from the remnants of earlier civilizations, like crystalline structures growing in a chemical solution. I remembered how Louis Sullivan used an octagonal pattern on the wall of the Getty Tomb (Fig. 3) to signify resurrection from the earth (square) to the heavens (round). I thought of the powerful centrality of Pueblo kivas and round villages in the American Southwest. My earliest sketches show an octagonal sanctuary, and the octagon in various ways remained a controlling geometry of the project throughout.

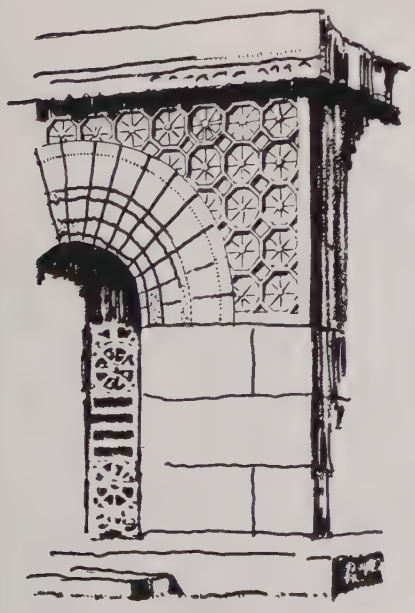


Fig. 3. Getty Tomb, Louis Sullivan, 1890

Years before, a photograph of the rock-cut church of Beta Gyorgis at Lalibela, Ethiopia, had fairly leaped off the page of a book I was reading (Figs. 4, 5). It had a bold, raw, yet humble majesty. It was not on, but of the earth. It was not made by addition, but by subtraction, an idea liberated from the rock as a Michelangelo releases a Moses. This church seemed as much an integral part of Creation as the footprint of a dinosaur fossilized on the floor of an ancient sea. The original upper surface of the rock seems undisturbed except for the reverberated Greek cross on the sanctuary roof. The visitor descends along natural watercarved ravines, meandering to the point where the axial precision of the cruciform concept begins its uncompromising control. I wanted this new sanctuary to make a statement as bold and timeless as this twelfth century Ethiopian church.

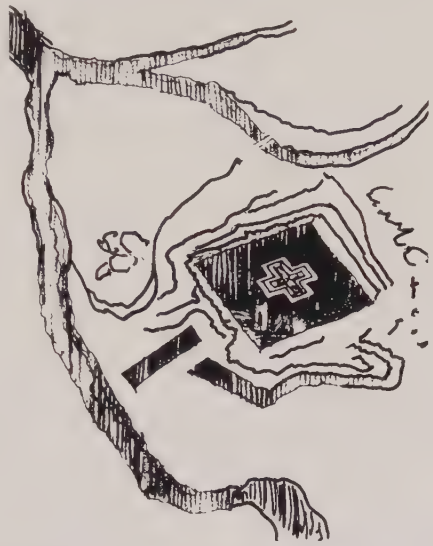


Fig. 4. Beta Gyorgis, Lalibela, Ethiopia, 12th century monolithic church

Photo by Joseph L. Donofro, AIA

Fig. 5. Beta Gyorgis

Fig. 6. S. Ambrogio, Milan, 850-c.1180

Historical examples can focus and undergird an architect's thoughts and feelings as he attempts to create. Ever since I walked into the atrium of the Romanesque church of S. Ambrogio in Milan (Fig. 6), I have been fascinated with the potentials of walled courtyards around buildings to extend, foreshadow, and protect interior spaces from the clamor of surrounding streets. At S. Ambrogio, the quiet dignity of a sky-roofed nave receives the visitor, foreshadows the internal nave, and frames the west front, so that by the time the visitor enters the twilight mystery, hears the echoing chants, and smells the incense, he is spiritually prepared to appreciate them. It is interesting to note that most of the early Christian Churches gathered believers into cloistered atria before admitting them to the sanctuary (Fig. 7), and that while some of the reasons for the atrium have disappeared, there are many which remain. At Loachapoka, I considered the atrium from the beginning as an integral part of the total design.

I also felt that this building had to belong with the gently rolling fields and forests, the farmhouses and outbuildings of East Alabama. I love the barns with their broad planes of earth-gray planking and russet tin roofs sweeping upward from within their own plank-fenced "atria" (Fig. 8). Inside, they become time-grayed, loosely woven cathedrals with splinters of light slicing diagonally down through forests of trusses, columns, and stalls, hung with chains, ropes, and rustic tools,

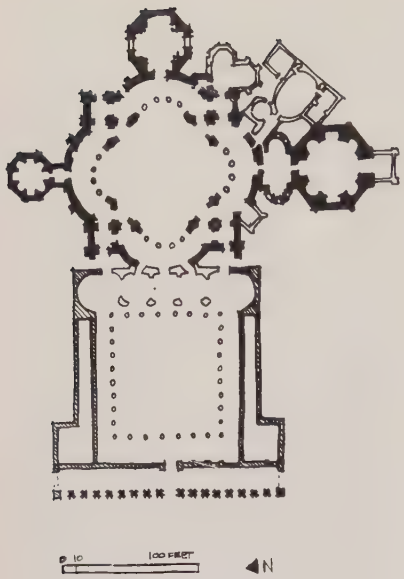


Fig. 7. S. Lorenzo, Milan, c.370

Fig. 8. Alabama barn

Fig. 9. Alabama farmhouse

making us feel we have entered a Piranesi fantasy.

Many unpainted tenant-farmer houses remain a part of the scene (Fig. 9). Typically tin-roofed with board-and-batten walls, they rise on low piers of brown and orange native stone. Anchored at each end by massive tapering stone chimneys, they peer humbly out through the narrow columns of their porches down slopes terraced a century ago to raise cotton. Like Thomas Hart Benton paintings, they are pure innocent utterances of the land and its people.

The dominant house forms in the village are the larger landowner farmhouses: white-painted, wood-walled masses topped by steep 45 degree tin roofs and wrapped on two or three sides with spacious Victorian and Greek Revival porches (Fig. 10).

I was quite conscious of this rural harmony, its images, ideas and feelings as I worked. The octagons, the barn interiors, and the 45-degree roofs all suggested an organizing mode which I find personally satisfying. It is expressive, flexible, and buildable, involving perpendicular and diagonal grid systems superimposed to form plaids. I enjoy using these plaids to structure semi-abstract drawings of natural places and creatures that haunt my childhood memories and imagination (Fig. 11). These interminglings of criss-crossed lines seem to symbolize rays of energy woven throughout the natural and man-made worlds, helping me to relate buildings to earth, sky, trees, and other buildings through the medium of a common language.

And so a building began to emerge from the plaids. Outside and inside must

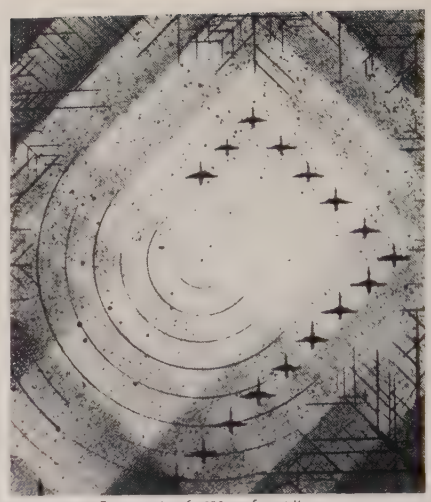


Fig. 11. "Reflections in the Waterforest."

of course grow simultaneously. An exterior is a promise which must be fulfilled by an interior. I tried everything, papering the drafting room walls in every conceivable way to generate the right sense of worship. I staged in-house competitions among the various schemes. Over a period of many days, one rough sketch kept rising to the top of every competition. Its essence became the basis for the entire design (Fig. 12).

The overall concept consists of three "naves": the garden nave in the parking area, the atrium nave with amphitheater seating descending to another more intimate garden and the indoor nave. These are experienced in sequence by the visitor (Figs. 13, 14). He ascends the stairs into a narrowing outdoor hall topped by an open-framed gatechapel, a foreshadowing of the indoor nave. The cruciform door-pulls and the octagonal east gable come into view, foreshadowing the reredos and echoing the atrium form.

Fig. 10. Farmhouse, Loachapoka, Ala.

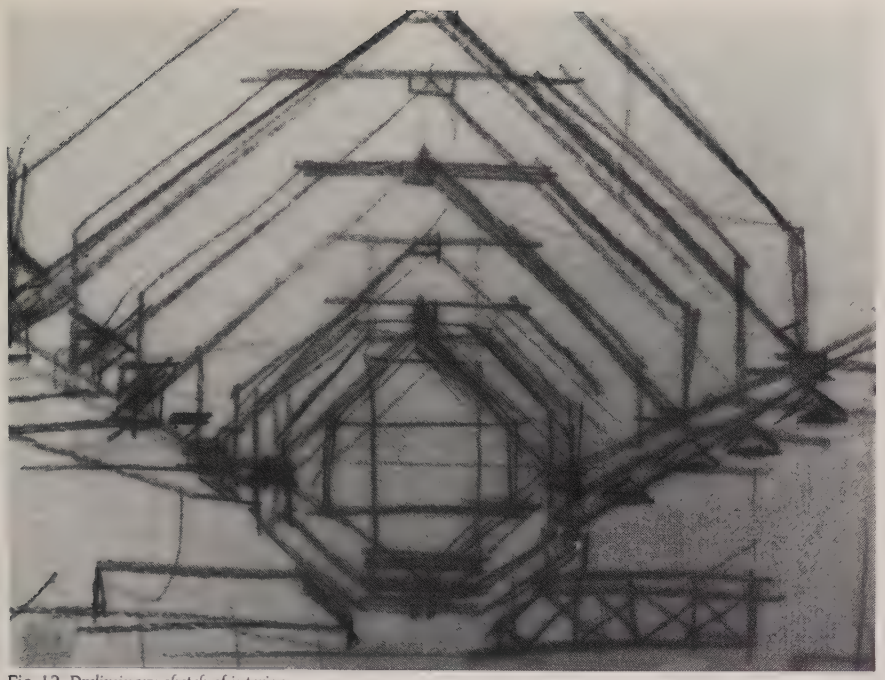


Fig. 12. *Preliminary sketch of interior*

The narthex became a porch or gallery looking down into the atrium garden and forming a link with the existing building to the north. I tried to capture some of the welcome easiness of the long porches, familiar to the region, where hellos, goodbyes, and friendly conversation flow so naturally.

The sanctuary and its atrium walls rise from a concrete masonry base to be veneered eventually with a battered wall of local field stone. Rough-sawn board-and-batten walls enclose the entire project. In the atrium and rear mechanical court, however, the battens were simply omitted, providing ventilation without weakening the integrity of the wall. Trim, fascias, sills, etc., were intentionally oversized to clarify elements and increase the overall sense of mass and stability. I wanted a ribbed metal roof to complete the indigenous palette of stone plus wood plus metal, but this turned out to be an economic impossibility, and the substituted asphalt shingles were not a disappointment.

The interior, while conceptually complete, needed much careful detailing. The most difficult element was the reredos, the screen behind the altar which had to unify the composition of altar, pulpit, and communion rail, and provide a worthy climax for the entire experience. The octagonal form of the reredos seemed right, but upon it there had to be something which could synthesize and symbolize the spirit, form, and function of the sanctuary.

All agreed that a cross was appropriate, but what size, shape, and material? For days and nights I drew crosses—hundreds of them. Sketches which at 1:00 A.M. looked like perfect solutions seem to lose their luster overnight and resemble cheap Christmas cards the next morning. I read books on crosses and visited churches. I felt that we needed a large positive statement of strength and

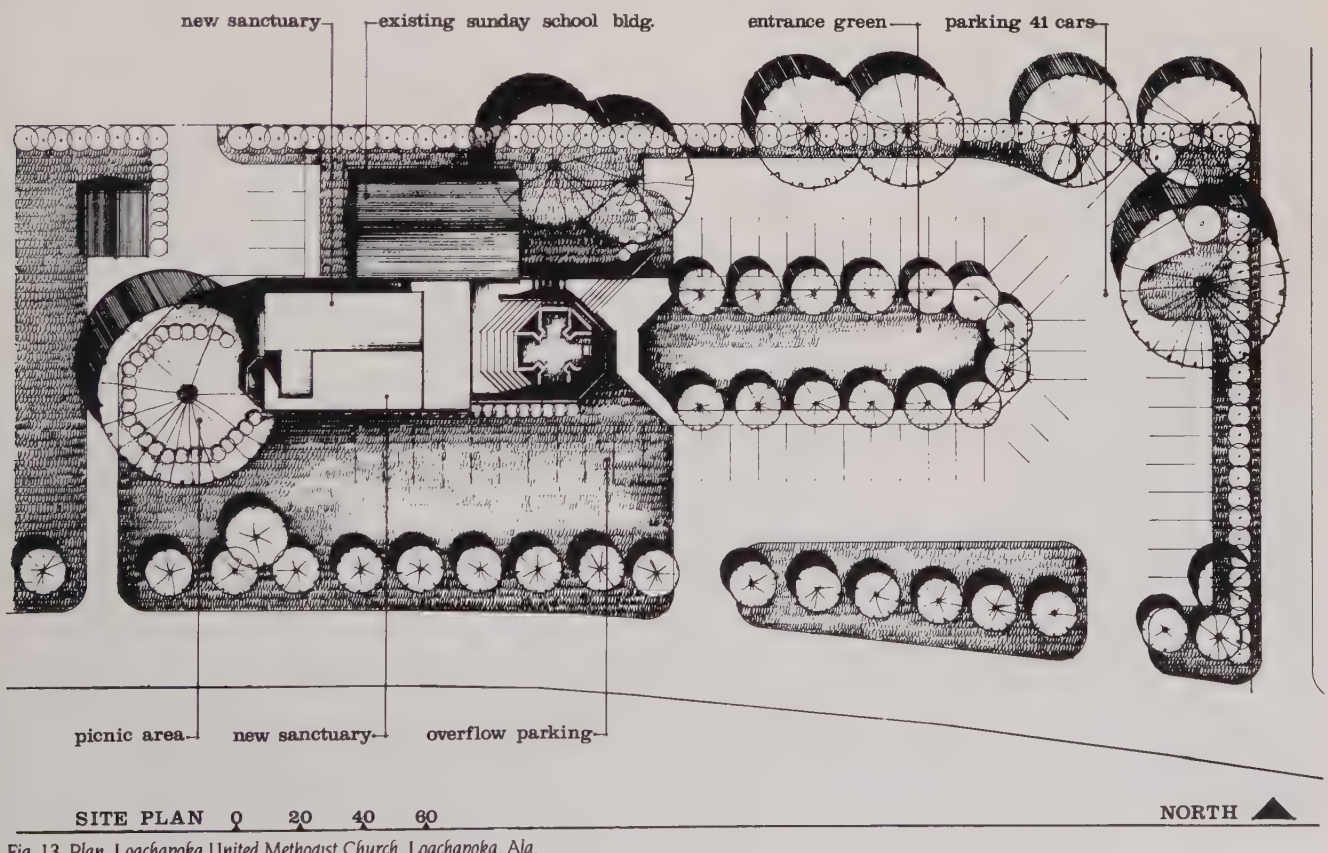


Fig. 13. *Plan, Loachapoka United Methoaist Church, Loachapoka, Ala.*

Fig. 14. *Loachapoka United Methodist Church (garden nave to be added)*

assurance, rather than an apologetic, unconvincing little cross. The strengths of the early Christian cruciform floor plans and the roof of the rock-cut church of Beta Gyorgis had, I thought, a much needed message for modern Methodism. But these examples possess a certain static, fixed quality that lacks the dynamism and sense of infinity that Methodism attempts to declare. Carl Jung speaks of the ancient association of the cross with the tree.[1] The tree symbolizes permanence and strength combined with continuous growth and the kind of inclusive open-endedness that Methodism embraces. The tree metaphor added life to the cross design.

Therefore, I was very proud to show the building committee the design in Fig. 15, which to me captured both the power and the dynamism we sought. I was so sure of my ground that I was totally unprepared for their rejection. They said it was just not a cross; and no amount of talk about Carl Jung and dynamism and infinity could make it look like a cross.

This was all happening during the Christmas holidays, and the season heightened the intensity of my search for an expression of Christian truth which would speak to at least a majority of the congregation. I read more, drew more, and eventually arrived at the unanimously approved solution shown in Fig. 16. Many people have asked me what *kind* of cross it is. I tell them that while there may be others like it, and it may well have an official name, I prefer to call this one the Loachapoka Cross.

When laying the building out, we carefully oriented the steeple window to the sun's path by marking the shadows cast from 11:00 a.m. to 12:00 p.m. by a vertically hung 2" x 4". On clear days, the sun rises and enters the sanctuary through the large half-octagon east window and strikes the altar and reredos. Then at 11:00 A.M., when the main worship service is beginning, it pierces the steeple window and begins a slow steady march across the reredos, stepping onto the various planes of the cross until it again illuminates the altar at noon. There is enough of the ancient mystic in me to feel that if I were one of those gathered here in search of something beyond, I would be gladdened and reassured that these things were happening.

(Editor's Note: The Loachapoka United Methodist Church received an Honorable Mention in IFRAA's *1980 Architectural Design Awards Program and was pictured on the cover of the fall* 1980 *issue of* FAITH & FORM.)

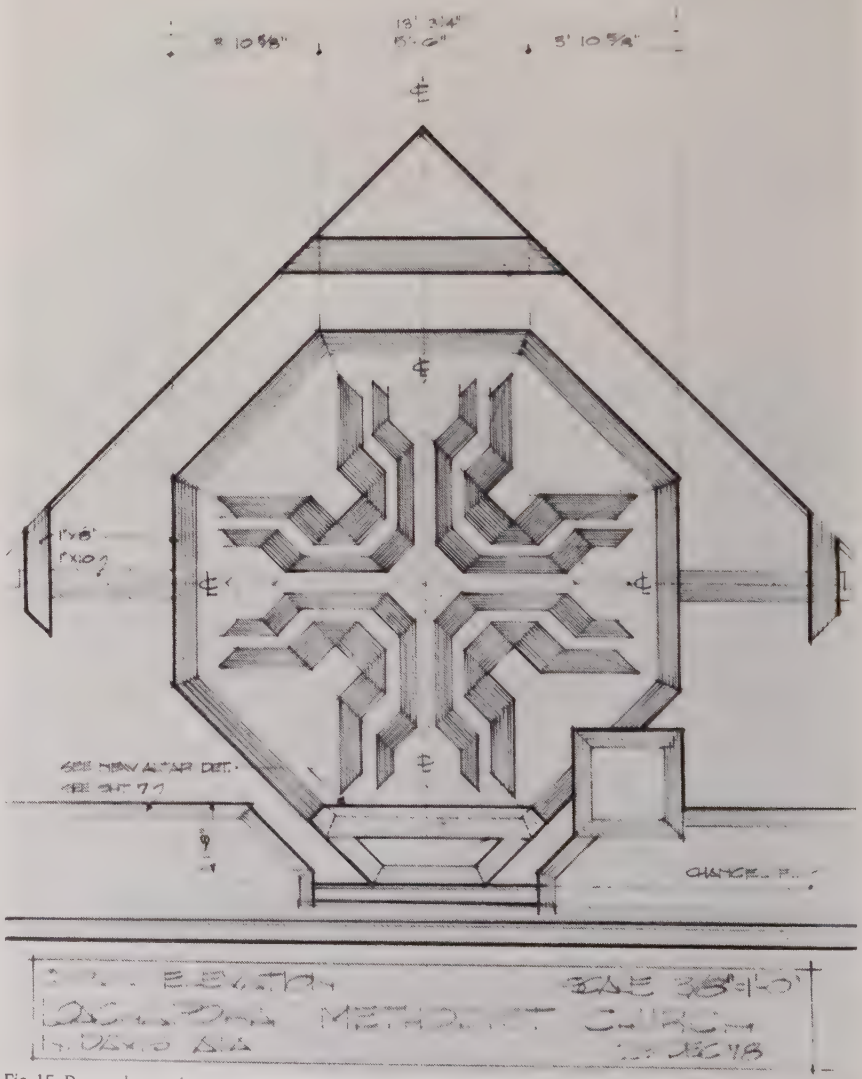


Fig. 15. *Proposed cross elevation, Loachapoka United Methodist Church.*

[1]Jung, Carl G. *Man and His Symbols*. Garden City, N.Y. (Doubleday & Co., Inc.: 1964), p. 80.

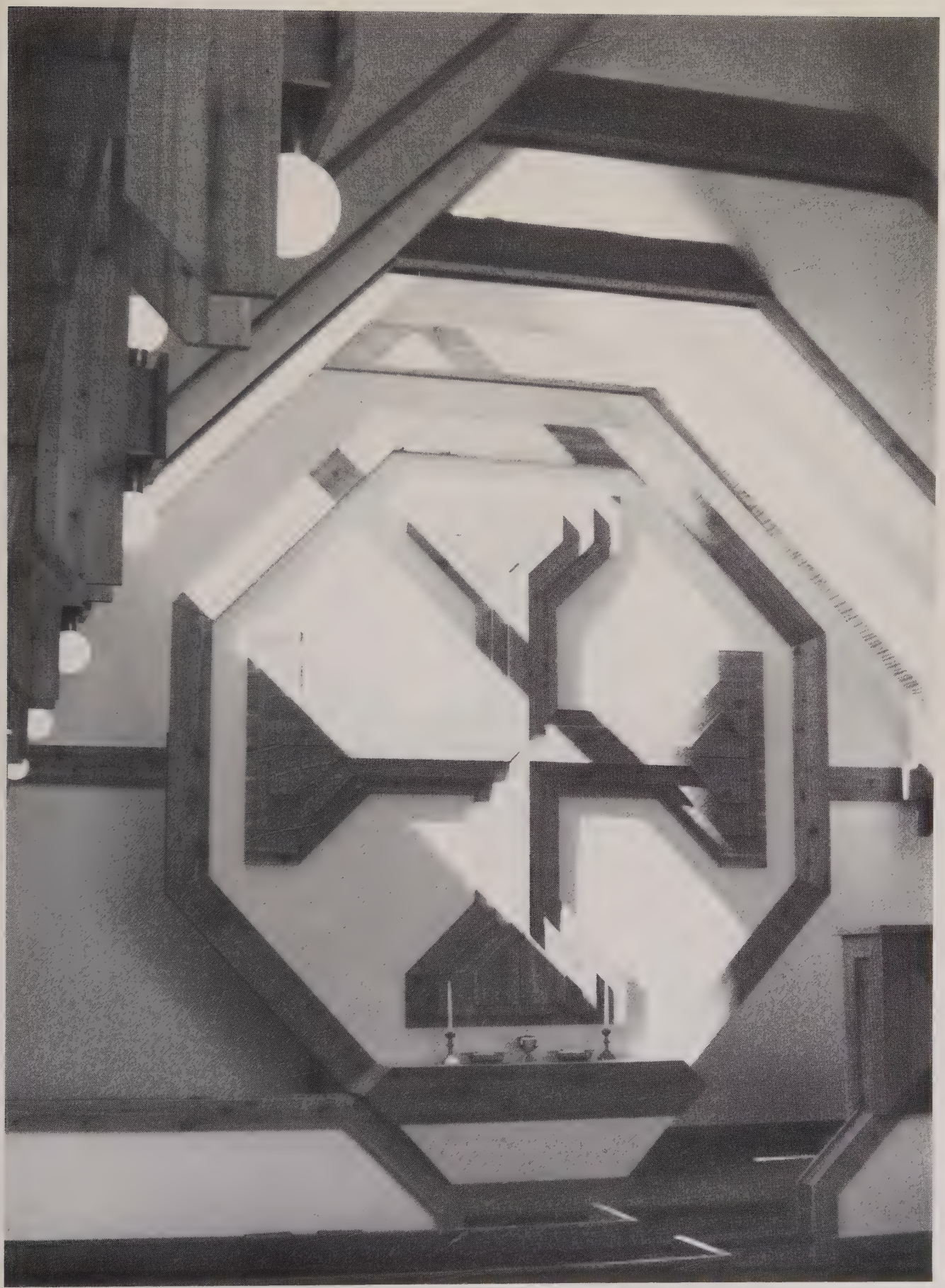


Fig. 16. *Sanctuary, Loachapoka United Methodist Church*

THE DESIGN OF A CHAPEL FACILITY

by Gunnar Birkerts

The design concept is the ultimate synthesis of all the factors that have an influence on the solution. In order to engage meaningfully in the synthesizing process, the mind has to assemble the information without prejudice or preference. Some of the important considerations are the larger environment—its geographical, geological and climatological characteristics; and the immediate surrounding area, which includes land use, vegetation, views, building vernacular, traffic patterns and larger scale zoning considerations.

The first steps of probing into the architectural problem are programmatic. A building program listing the required functional spaces, their size and relationship to each other and to the whole, is the beginning of the program draft. The next stage addresses the more detailed considerations and indicates their qualitative characteristics, thus suggesting their potential ambiance. If quantitative requirements are fixed, the qualitative requirements are the ones that affect the cost of the envisioned project. Therefore, cost appears as a factor affecting design. The structural requirements for enclosing the functional needs become evident.

Photo by Timothy Hursley

Chapel and Educational Facility, Camp Wildflecken, Frankfurt, Germany

As the space is enclosed, the need for interior control emerges.

There are instances when the design concept has to convey meaning and the architectural expression must symbolically express function and purpose. This search for the *inner structure* becomes one of the most important factors in the synthesizing process. It requires full understanding of the symbolic, philosophical and metaphorical ingredients. Finally, the synthesizing process depends on the heritage and cultural background of the architect, since there have to be values assigned to all of the factors considered in the process. It is for that reason that the same basic ingredients, processed by different minds, would show considerable difference in the final result.

Design Notes for the Chapel and Educational Facility, Camp Wildflecken, Frankfurt, Germany

Site

Camp Wildflecken is in a hilly part of a forest preserve. The building vernacular in the area has stayed traditional or, at best, moderately progressive. Building materials and technology have been perpetuated over centuries. The vernacular on Camp Wildflecken consists of two types: the pre-World War II architecture in the local vernacular and the post-World War II infill shed-type minimal buildings. Immediately south of this site are more recent residential and apartment house structures.

The site is strongly elongated on the east-west axis. The northern half of the elongated site is rather thickly covered with deciduous and evergreen trees. These trees form a strong visual and acoustical barrier between the more heavily populated living quarters to the north.

The readily available building area not covered with vegetation is a long and narrow east-west strip on the south side. The trees provide an extra buffer between the dormitory blocks and the religious center. On the south, the proximity of the residential units and the backyards require separating distance. The required parking is accommodated on the southwest end of the site without major tree loss. It became evident that, because of the site configuration and the distribution of vegetation, parking and the building solution would have to be more *linear than concentric*.

GUNNAR BIRKERTS *established his own firm in Birmingham, Michigan, after having worked with Eero Saarinen and Minoru Yamasaki. He was an Architect in Residence at the American Academy in Rome where he was awarded the Arnold W. Brunner Memorial Prize. More recently, he has been the recipient of Professorships in Architecture at the University of Illinois and the University of Michigan, in addition to his private practice.*

Exterior Design Concept

The project is a contiguous Post Chapel and Educational Building complex. The main entrance into the Center is from the north, serving the chapel as well as the religious education building.

The design of the Religious Center seeks affinity with the buildings around and the vernacular architecture of the region. The strongly formed sloping roof planes are expressive of the function of this particular building and emphasize the spiritual quality of it. On the lower portion, the sloped roofs echo the forms of the residential blocks surrounding it, allowing the chapel to reach high, toward the light from the north. Exterior walls are in masonry construction, finished in stucco plaster, again, staying with the prevailing building technology and expression of the region. The Religious and Educational Building is formed by contiguous worship and educational spaces. This closeness affords more efficient planning and multiple-use space considerations.

The south wall of the Center adjusts to the neighboring residential building scale. The north wall, moving in and out equally, creates sheltered spaces for children for outdoor activities, which are further sheltered by a dense grove of trees.

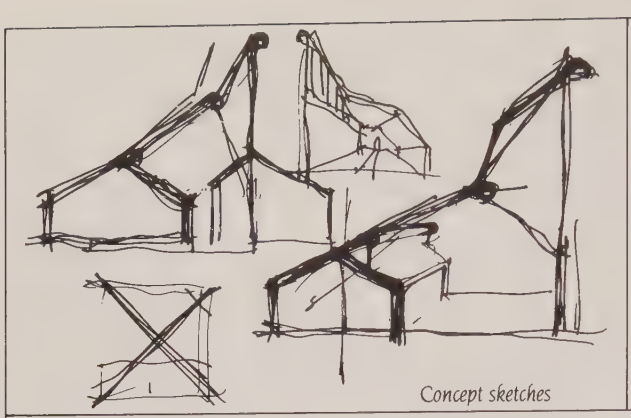
Interior Spaces

All the public spaces achieve a strong overtone of the spiritual and religious expression by the high flying, reaching, ceiling planes as exemplified in the nave itself. To a lesser degree, this is repeated in the activity room, which is also designed to act as a baptismal chapel. Furthermore, it is carried into the public circulation areas throughout the religious education wing. Vertical skylights toward the north bring daylight into the interior of the spaces and, in reverse, project light outward from the activity at night.

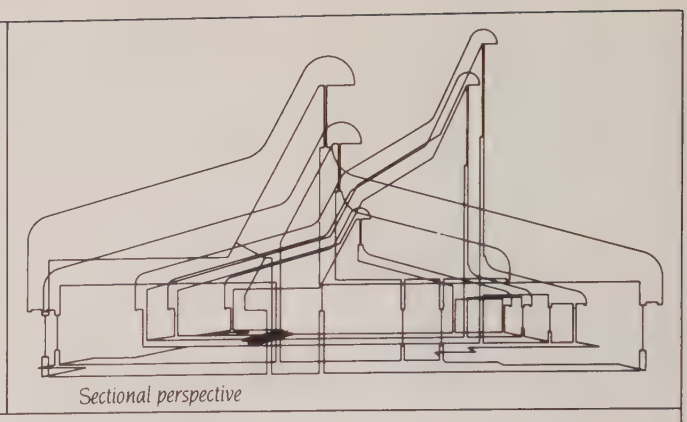
Interior lighting is designed to illuminate the space-forming ceiling surfaces,

Site

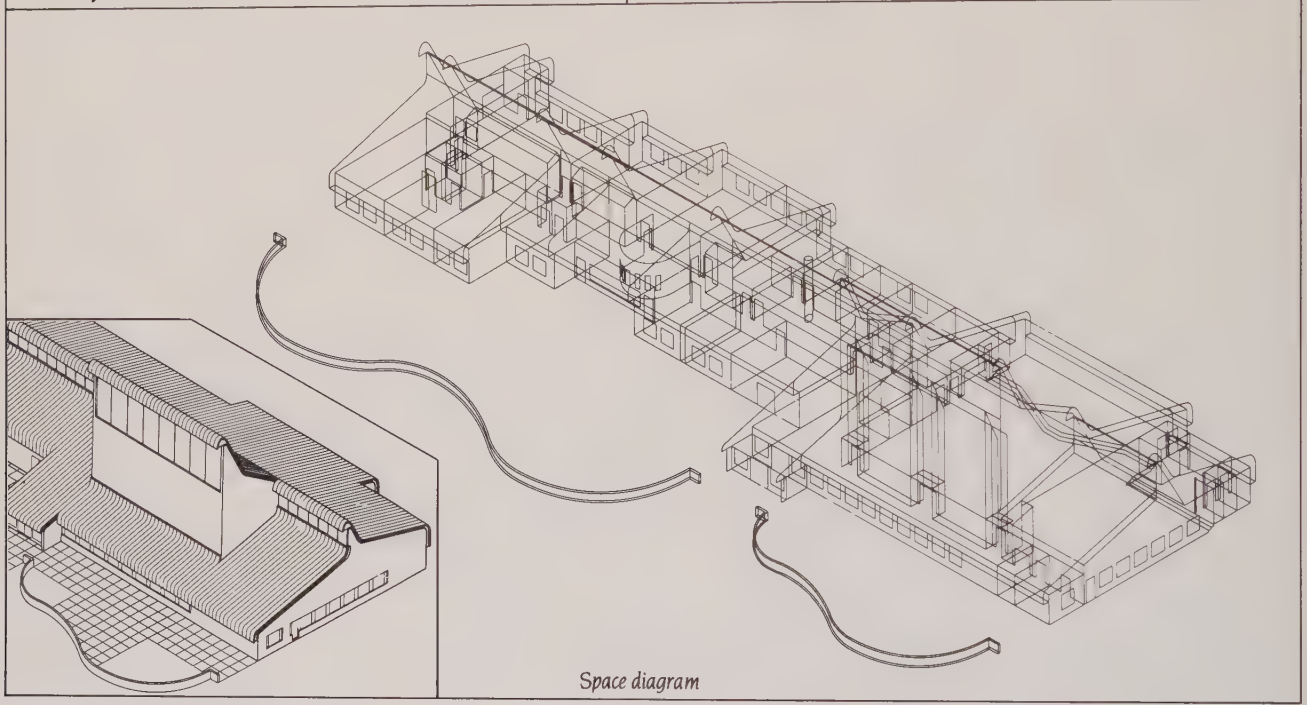
Site Plans



Concept sketches



Sectional perspective



Space diagram

thus recreating a spatial feeling similar to the one created by natural light during the day. Window openings are double glazed. All interior walls are masonry for better sound insulation and are plastered and painted. All interior trim and doors are wood. Pews in the nave are wood with upholstered seats. Floors are carpeted throughout except for entrance areas, and ceilings are plaster with acoustical inserts as required.

Other Design Concepts Considered

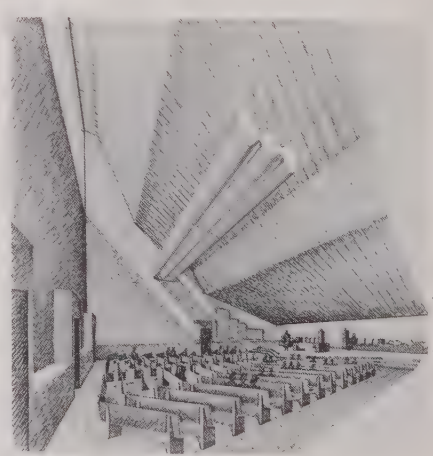
1. Detached structures for worship and education.
2. A two-story unit attached to a single story worship center.

In option 1, where the two buildings would be separated by an open court space, the linearity of the necessary, already elongated form would be extended further. It would affect the parking, crowding its layout toward the west.

In option 2, it would have minimized the site coverage with a reduced "footprint." However, the educational *center* concept would have suffered, since the educational unit would have had to be kept in two separately functioning parts with the necessity of duplicating toilets, services, and access for the handicapped in the form of an elevator or chair lift. The two-level educational unit would have also presented considerable design problems, particularly in the effort to establish a harmonious exterior relationship for the total.

Conclusion: Visual Aspects of the Proposed Concept

The form of the proposed center of worship is expressive of higher spiritual and emotional feelings. It is symbolically expressing the act of worship common to a variety of religions and beliefs. The objective was to create a facility for religious service and education, which is architecturally expressive of its function and is an appropriate insert into an already existing physical environment with strong regional aesthetic overtones. The building is a contemporary visual manifestation of that.



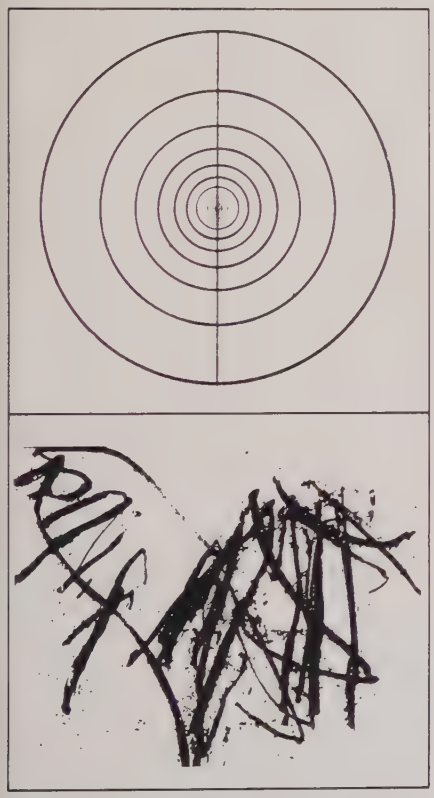
Interior

Photo by Timothy Hursley

CREATING VISUAL RESONANCE

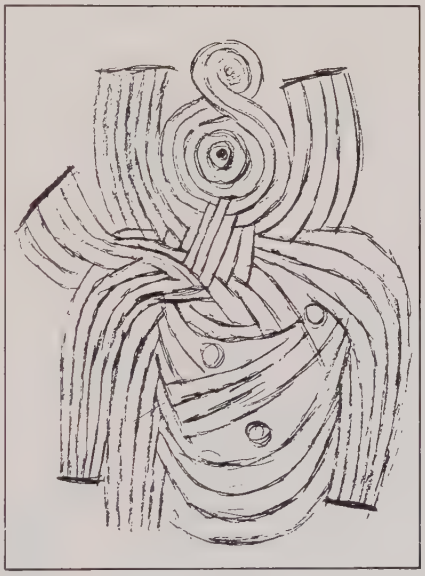
by Clovis Heimsath, FAIA, Architect
and Maryann Heimsath, Designer

The artist Paul Klee spent his career exploring perception. He was fascinated to find how the "mind" was wired, how certain visual stimuli would be received. He discovered, for example, a linear circle that wound back on itself to the center was "visually" at rest. Conversely, linear curves that formed haphazard circles were more highly charged.



For Paul Klee, the excitement was playing off the ordering system of the circle against the free expression of the line. At what point was the circle destroyed? At what point was it obvious that it was banal?

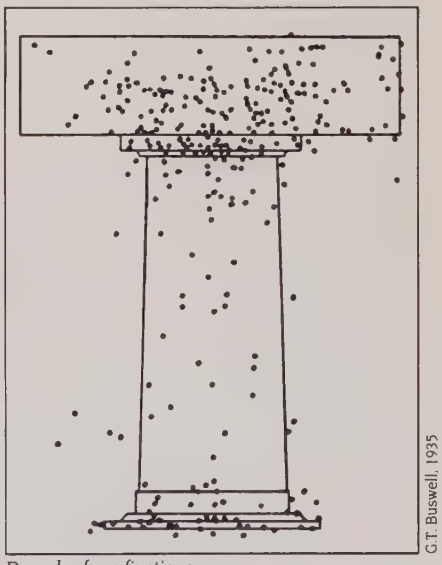
When successful Paul Klee balanced the ordering methods of geometry and the free form elements of geometry and



created works of art, as if suspended in the tension between the poles of order and chaos.

I would like to use the phrase "visual resonance" to describe the characteristic achieved by Paul Klee. Something is resonant in audio terms when sound waves meet an object creating sympathetic vibrations. Paul Klee used the mental image of geometry wired into the mind, and developed lines that played off against these geometries, creating visual resonance.

Clovis and Maryann Heimsath feel architecture and art, when properly considered, create visual resonance. Architecture and art are perceived quite differently. When one glances at a space, the major architectural characteristics of the form are perceived first, in general, then



G.T. Buswell, 1935

Records of eye fixations.

the art is perceived at a second glance. Where art and architecture are integral, there is the possibility of visual resonance.

What is integral art? It is art that becomes part of the architectural structure and form of the building, rather than an object standing apart from the building. Architectural elements have traditionally been the place for integral art, such as the biblical stories that greeted the viewer on entering a Gothic cathedral. Traditionally, there was art at the impost, that is, where the arch meets the support, or there was a medallion between arches or a decorative floor or stained glass in windows or art at special entrances and vistas.

CLOVIS HEIMSATH ASSOCIATES *is located in Austin, Texas.*

Photos by Mary Ann Heimsath

Kagan-Rudy Chapel, Houston

The term *craft* has traditionally been used to indicate objects of integral art. The work has fallen into disfavor in recent years by the exclusivity of the Modern Movement. Only works that were free expression of an individual unencumbered by context were deemed sufficiently pure to be called art. Art and architecture were separate entities, so the logic argued, and it was inappropriate to inhibit the art in service of architecture.

The architect has never winced at the concept of *craft*, for a building may be a "work of art," but it is never a "piece of art."

In liturgical design, neither the word *art* nor *craft* completely defines the issue. Art and craft are both subsumed under the word *iconography*. Icons were the formalized images given religious relevance in the Russian and Greek Orthodox churches, a means of reproducing patterned forms generation after generation. The word *iconography* covers all the crafted pieces that are designed to enhance the religious significance of the architecture.

How do Maryann and Clovis work together to create work of visual resonance? There are five keys to their successful collaboration:

1. The goal is visual resonance.
2. It is achieved by creating a sequence of architectural spaces and a sequence of

iconography and relating them simultaneously.

3. While Clovis is the lead *architect* and Maryann the lead *artist, each must be involved in all major design decisions.* The building itself becomes the primary icon. All crafted items complete and redefine the building.

4. Iconography is integral to the design. Therefore, works of art are the first cost in the budget, not the last. They cannot be removed any more than structure can be removed. Architectonic and crafted items are imbued with meaning, translated from one generation to the next on one level and reinterpreted for each succeeding generation.

5. Inspiration for architecture and art must be ontological, that is, deal with issues of existence. The study of how we know (epistemology) must be merged with how we exist (ontology). The age insists, with the Existentialist, that existence precedes essence.

How forms are translated, given new life so that they can resonate in the spiritual environment, is the goal of each collaboration.

An example will bring the process into focus. In designing the Kagan-Rudy Chapel, the challenge was a holy place in a memorial park to honor the deceased members of Congregation of Temple Emanu El. In early meetings with the building committee (sessions that both Maryann and Clovis attended), it was clear that historical recall was an essential dimension of the holy place. After many discussions, a central-form temple evolved. The recall was Jerusalem; the recall was Masada.

The chapel was designed with six arches creating a space above the impost suitable for twelve medallions, recalling the twelve tribes. The location, size, character and material of these medallions were discussed often over the development of the design. Clovis, the architect, did the actual drawing and Maryann acted as an ongoing design consultant. (The process would reverse itself when Maryann began to design the stained glass windows.)

How does this differ from art that is added to architecture? In approaching the design, Clovis established the architectural form and Maryann established the iconography. Since the building itself was iconographic, Maryann needed to be involved in all designs that affected the location, texture, colors, etc. of the building. For example, Maryann decided that

there should be no color on the medallions, color should be left for the tiles and the stained glass. Again, the medallions should be bronze so that the memorial screen could, being bronze, tie in with the twelve tribes. Finally, the icon of the stained glass windows summed up the design process.

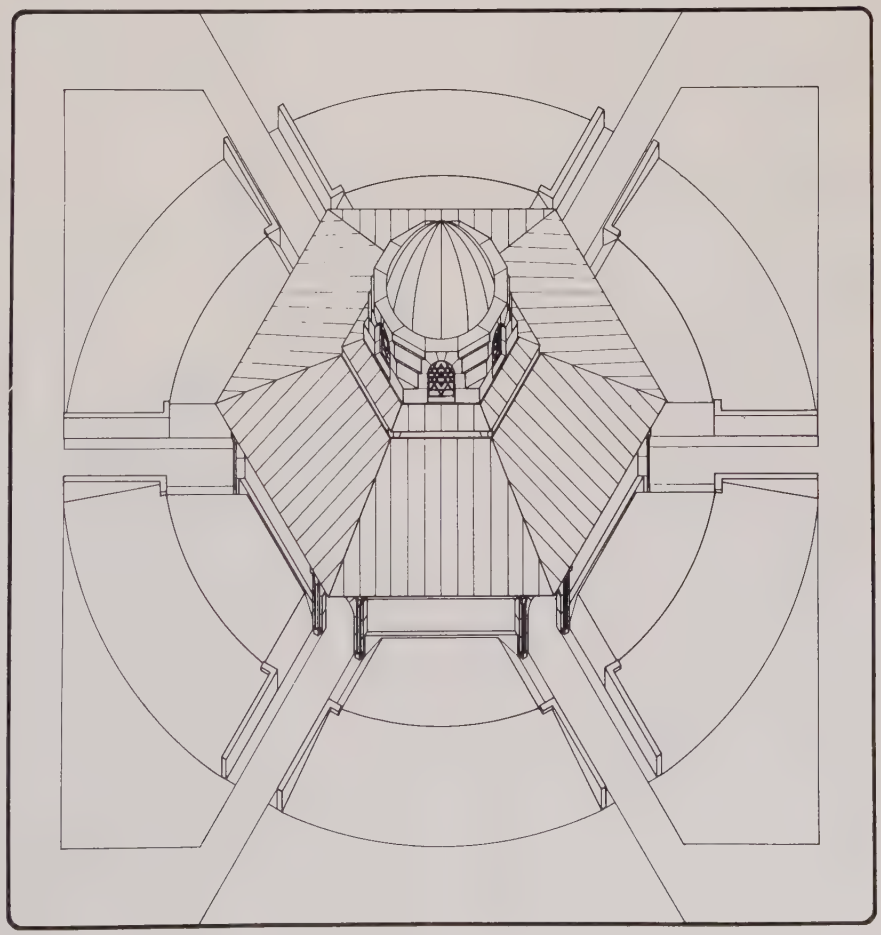
Maryann developed an overlapping pattern of hexagons, recalling the Star of David and the geometries used to develop the chapel itself. Then she chose a sequence of colors, the colors of the spectrum. She varied the color sequence in each of the six windows so that each window would filter the light through a varying palette at each 60 -degree arc of the circle (left).

The design was epistemological (dealing with how we know), since the Star of David image is intimately related to Judaism. But the stained glass windows project image, across the chapel onto the opposite side of the dome. The image changes throughout the day in color, location and intensity. Here, the iconography is ontological (dealing with existence), since the viewer is involved in the immediate context of the viewing.

Visual resonance, the goal of the collaboration between Maryann and Clovis, was achieved by integrating the art and architecture to make each come alive.

The dome without the stained glass would be less complete; the stained glass without the reflection space would be less complete. Together, they resonate (below).

The team of Maryann and Clovis approaches each project, religious or secular, in the same manner. In professional and personal terms, it becomes the complete marriage.



SUBJECT MATTER AND DESIGN

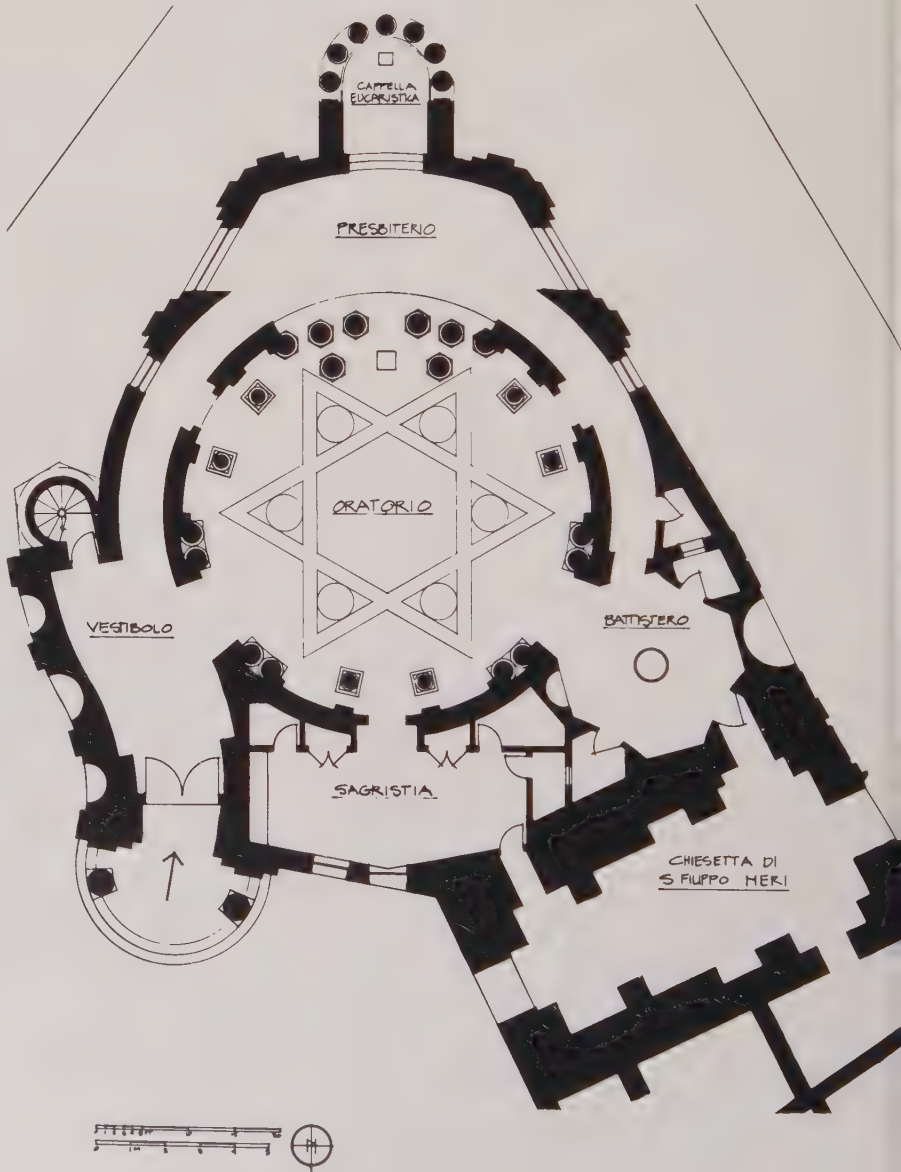
by Thomas G. Smith

I work to achieve a synthesis of form, function and symbolic content in my buildings. I believe that functional constraints can sometimes spur one to devise brilliantly logical conclusions; that adversity is a stimulant to talent.

A solution in which the formal, functional and iconographic are inseparable is able to convey emotional content that deepens meaning. It orchestrates the intuitive, literal and symbolic and reaches toward the profound. If one understands the classical elements of architecture, one can dare contradict the meanings of prototypes and extend the traditions in an architecture appropriate to one's own age and that is accessible to one's peers.

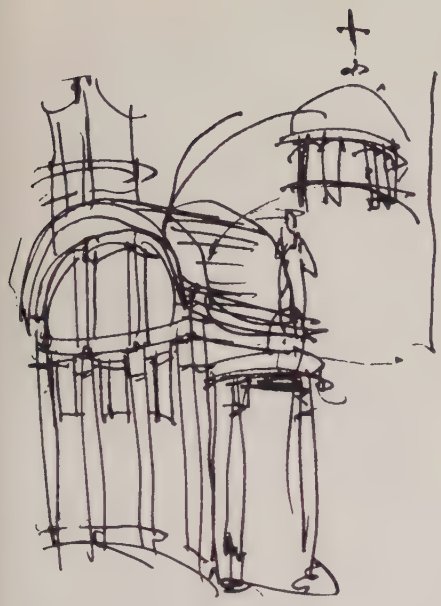
I am primarily drawn to the classical elements of architecture for their formal beauty, sculptural malleability and rich tradition of iconographic associations. I use these elements either metaphorically or iconographically depending on the level of expression that is appropriate for the subject.

Although I am deeply interested in architectural history, I object to the current emphasis on the words "the past." I have no interest in "the past"; it is too remote and unapproachable. I am passionate, however, about the elements of architecture available to architects throughout history, and I am excited by the opportu-



Oratorio of St. Jean Viannay. Site: Via Giulia at Piazza Monserrato

THOMAS GORDON SMITH *is a practicing architect in San Francisco, California. He was a Fellow at the American Academy in Rome and exhibited at the Venice Architecture Bienale. He has written for various publications on historical form as a point of reference for contemporary innovation. He is also well known for his consummate drawings.*



Sketch of exterior from Via Giulia

nity to use this wide vocabulary to design buildings that solve today's problems and convey spiritual content. From my point of view, our current challenge is to extend the meaning of the elements of architecture and iconography for appropriate expression today

The Project

I wanted to explore the functional and liturgical requirements of a contemporary church. The project was a hypothetical one for an oratory dedicated to St. Jean Viannay, a 19th-century French priest who is the patron of parish priests. The oratory would function as a place for the revival of preaching and as a center for community prayer.

I worked with a priest as a surrogate client and with an art historian as an iconographical consultant. As the three of us refined the functional and iconographical program of the building, the subject became more clear: the priest's role in leading his congregation to salvation through the Eucharist, preaching and penance.

Site

The site is a gap in the continuous row of buildings along the Via Guilia near the Oratorio of the Filippini in Rome. The previous buildings on the site were demolished during the 1930s, but never replaced. The project is adjacent to the derelict 18th-century chapel and convent of St. Filippo Neri and would be entered from an existing piazza at the end of Via Monserrato.

Exterior

I resolved a centralized plan on the irregular site and developed the scheme as a spherical volume encircled by an ambulatory and divided by three axes. I assigned each of the elements of the subject—the Eucharist, preaching and penance—to an axis which originates in aediculae dedicated to Jean Viannay and his personal patrons, the Virgin and John the Baptist. The main axis begins in the aedicula at the sacristy door, the priest's entrance to the oratory. The door is surmounted by a statue of the Virgin and Child, which faces the altar and a chapel for the reservation of the Eucharist beyond.

Angel Flying With Crown of Thorns. Design for stained glass window, St. Jean Viannay

View from the Via Giulia

Interior

The oratory is composed of a pantheon-

like cylinder and dome. A Doric order of brown tufa emphasizes the terminal points of the axes, the chancel, vestibule and baptistry. Three pairs of solomonic columns support ogival vaults to form the aediculae from which the axes originate. Each aedicular contains three levels of representation of its activity. For example, the pulpit at floor level is for preaching. It is surmounted by an ascending statue of Jean Viannay, the priest's patron in this activity. The Saint aspires toward an abstract representation of the intangible goal of the preacher and his listeners, an emblem of Divine Wisdom.

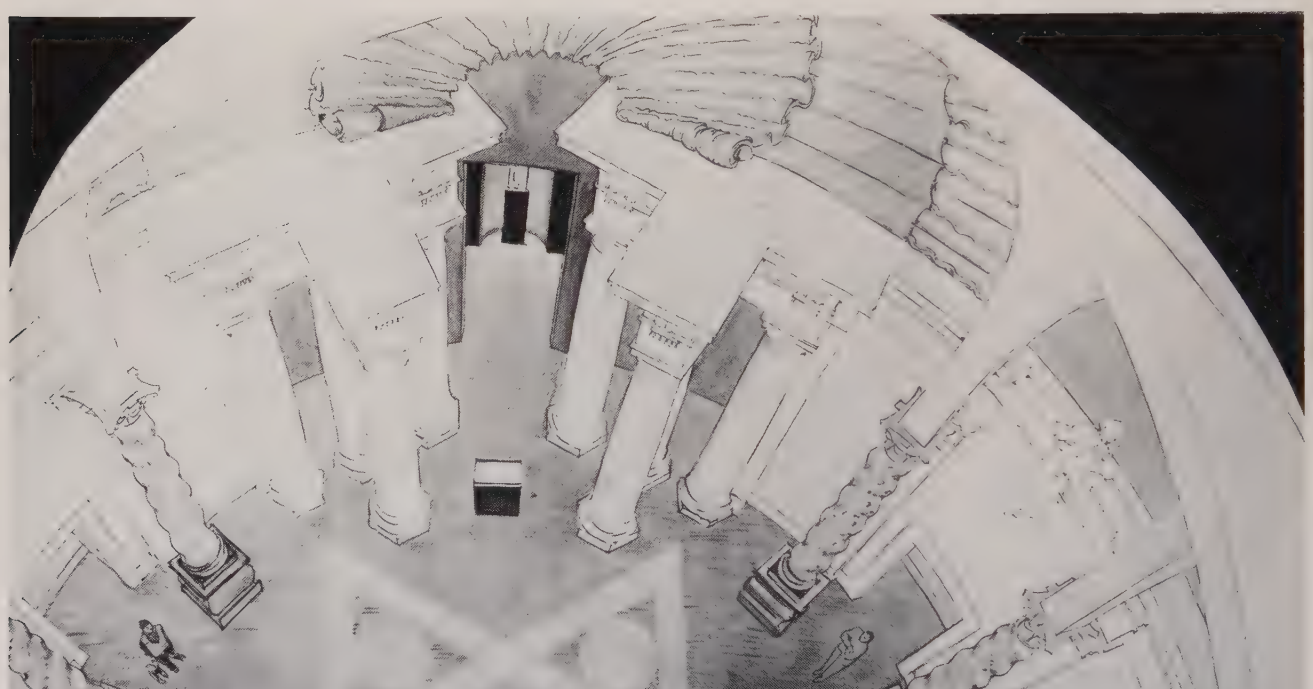
This progression from earthly to spiritual is echoed in the architectural elements. The pluvinated pedestals are bound to earth by gravity, but the torqued columns that spring from them seem to strive upward, albeit a tortuous route, which reminds one of Viannay's own struggle in life. Finally, the abstract ogival vaults are thrust from the columns without entablature and interweave to form a baldacchino that hovers within the earthly volume.

It is composed of serpentine Corinthian columns that spring from pluvinated pedestals to support the interwoven ribs of a vault. Pairs of these columns demark the three aediculae from which the axes of the church originate. Each pair of columns is textured with the bark of the tree, which symbolizes the human quality required for the ministry it accommodates. Corinthian capitals are composed of the leaves, fruit and flowers of each tree and are tied with the skin of an associated animal.

The baldacchino represents the presence of God's grace in the world. Its resilient forms convey the intangibility of spiritual energy. This is expressed on a perceptual level by the ambiguity of directional movement. The torqued columns seem to strive upward, which contradicts the impression gained from the pluvinated pedestals that bulge in response to a force greater than gravity. On a more literal level, I employed the Corinthian order because of its traditional association with "lofty" applications.

A Star of David is inscribed on the floor of the church. It defines the axes and symbolically conveys an historical and theological reality about the Church. The Star of David is an ancient symbol of Judaism and stands for the Synagogue.

Within each of the triangles of the star a mosaic medallion represents one of the six virtues of the Virgin at the time of the Annunciation, the moment the Law was fulfilled and the Virgin became the first tabernacle of Christ. From that instant,



View from oculus to floor

Collection: Deutsches Architectur Museum, Frankfurt

she represents Ecclesia, the Church, and supplants the Synagogue.

Conclusion

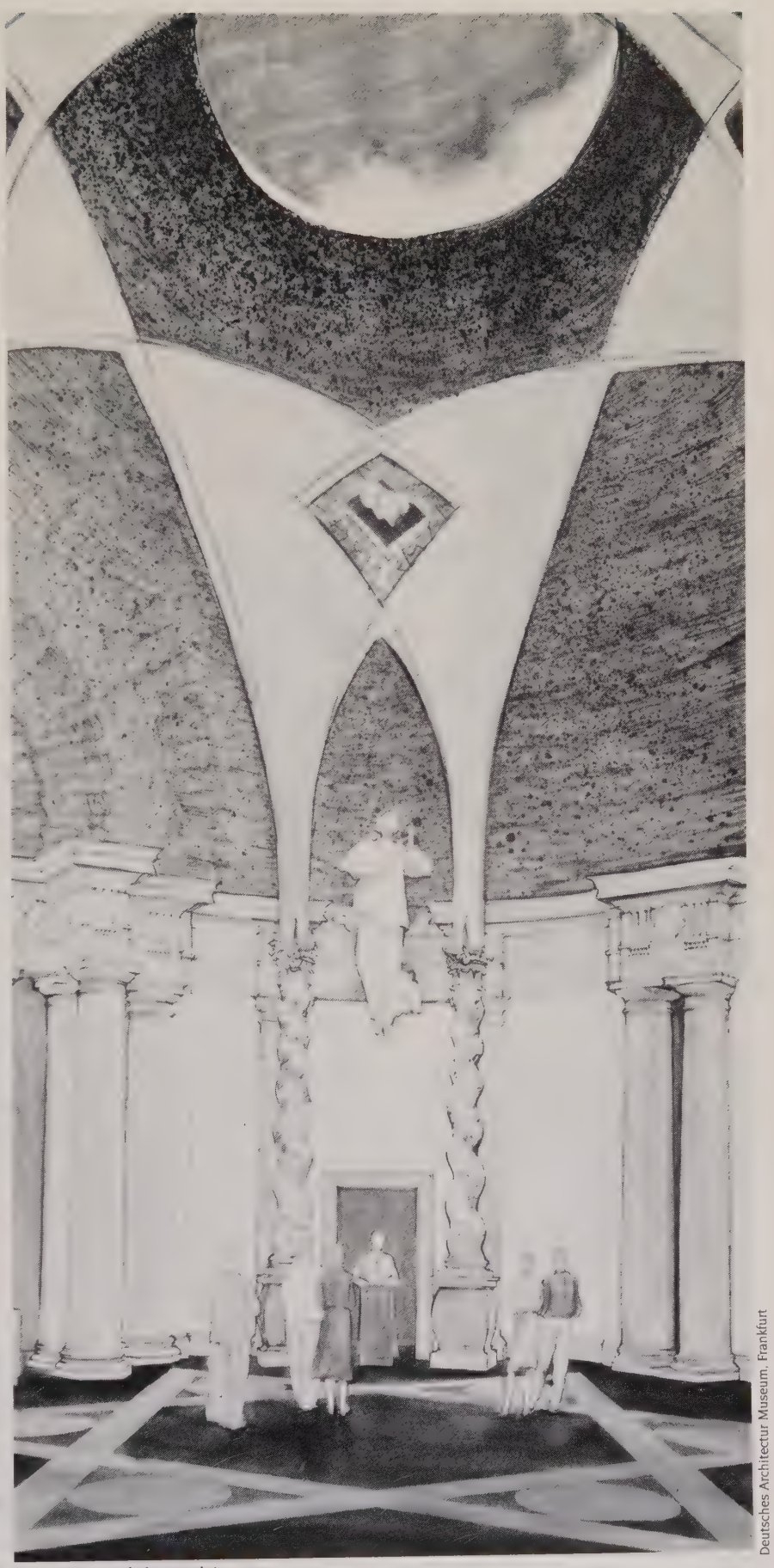
I wanted the oratory to express the spiritual nature of the elements of the subject and to demonstrate that together they provide a path to the goal of salvation. To accomplish this, I selected architectural elements and materials that would convey specific meanings and developed them to articulate the subject, a theological concept.

The subject is literally expressed in the building to enable the oratory to function as a medium for spiritual development.

This literal representation of ideas through architectural forms is perhaps limited in its application to buildings like churches, buildings with a predeliction toward symbolism and with a strong philosophical background that is appropriate to express.

Deutsches Architectur Museum, Frankfurt

View from altar toward baptistry



Deutsches Architectur Museum, Frankfurt

View from vestibule to pulpit

THE DESIGN PROCESS AND MASTER PLANNING

Presentation by Hatfield Halcomb Architects

A recent design problem faces the architect who receives a commission from one of the rapidly growing evangelical churches in the U.S. The congregations may be of enormous size and interested in supporting a rich and diversified program. To help them insure present and future growth, we have developed a design methodology around the use of a Master Plan, which allows for immediate or deferred construction.

Why 'Master Plan'?

The term refers to the development of an ultimate plan for the future total-phased facility. This will allow orderly, proper growth with a minimal amount of remodeling and waste. One of its main objectives is to provide the right amount of space in the right location at the time it is needed. A certain amount of flexibility must be considered in the facility to achieve maximum usage.

A Master Plan will

- analyze needs and future growth potential;
- establish immediate and long-range goals;
- plan future space, facilities and financial requirements;
- plan logical phased development;
- illustrate and inform; and
- unify support.

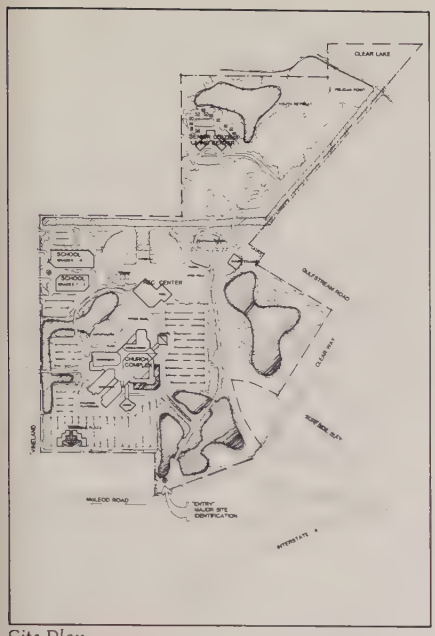
Model, First Baptist Church, Orlando

When working with existing facilities or a partially developed site, it is best to begin the planning process with a "Site and Facilities Analysis." Compiling schematic drawings of existing facilities, building by building, level by level, provides a useful tool for the client, building committee, board and planner/architect. These drawings can be used to document the current usage, state of repair, mechanical systems, problem spots, comments and a base drawing for future planning.

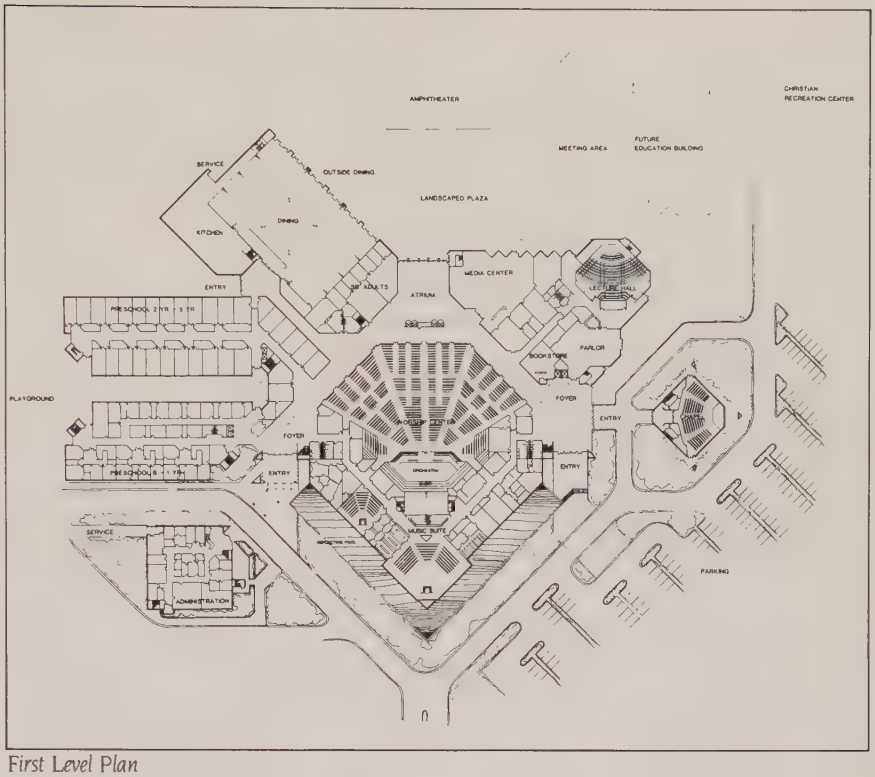
A comprehensive Master Plan considers

- existing facilities and environment;
- history;
- projections;
- programming and goals;
- priorities;
- land use and needs;
- codes and ordinances;
- parking requirements;
- zoning, setbacks and easements;
- height restrictions;
- conceptual space planning;
- phased development;
- cost estimates; and
- schedules.

Members of the firm of Hatfield Halcomb Architects, Dallas, Texas, *who participated in the* First Baptist Church *project, include* Jerry L. Halcomb, AIA, CSI, *principal in charge;* James E. Crandell, Jr., AIA, *project manager;* Lana Lawrence, ASID/IBD, *interior designer;* James H. Stewart, Jr., AIA, CSI; *and* Douglas C. Hartman, AIA, CSI.



Site Plan



First Level Plan

Master Plan Program for First Baptist Church, Orlando, Florida

The project involves the relocation of an existing downtown church experiencing rapid growth with no expansion capabilities to a new site of 156.8 acres to include:

a. Worship Center for 6,200
b. Education Center
c. Administration Center
d. Fellowship/Dining Hall for 1,500
e. Chapel for 400
f. Recreation Center
g. Christian School
h. Senior Citizens Living Center
i. Recreation Vehicles Vacation Park
j. Mission Plaza (several grouped chapels)
k. Missionary Housing
l. Amphitheater for 2,500
m. Lake Front Recreation
n. Parking
o. Retention ponds (approximately 10 acres)

The design of the entire complex should be responsive to the environment (planting and climate) that is so representative of Florida.

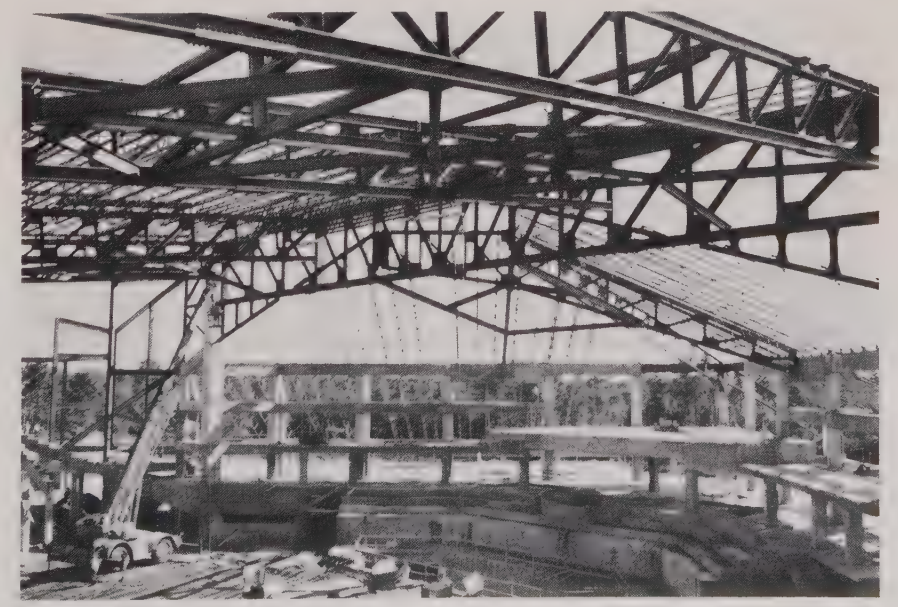
The first phase, completed in February 1985, contains the worship center, one education building, mechanical building and parking areas.

The Exterior

Design of the complex was generated by the main emphasis of the sanctuary as a central hub, out from which radiates connection to the education building, the dining hall and the media building on a fan-shaped horizontal concourse. The concourse corresponds to the fan-shaped sanctuary to provide a strong sense of direction that culminates at the central atrium and large entry foyer at each end of the concourse. The large atrium and concourse, with its fountains, skylights and greenery, is a natural place to congregate and a transitional space between inside and outside areas. From the three-story atrium, members will be able to look out over the plaza, amphitheater and pond. This visual tie is a key element in the overall master plan.

The Interior

a. Plan incorporates a fan-shape design to maximize seating with minimum distance from pulpit.
b. Choir holds 350 expandable to 600-plus. This is done in such a way as to prevent choir from appearing lost with only 350 yet not crowded with 600.
c. Baptismal, an important symbol and ordinance, is centrally placed.
d. Predominant entry from the rear of the sanctuary, behind seating.
e. Accommodates 118-rank pipe organ



Truss construction

behind choir.
f. Provides space of 80-piece orchestra between choir and pulpit
g. Orchestra pit is on an 80'-wide lift to facilitate the removal and loading of orchestra from rehearsal room below. This can also be used for full drama productions.

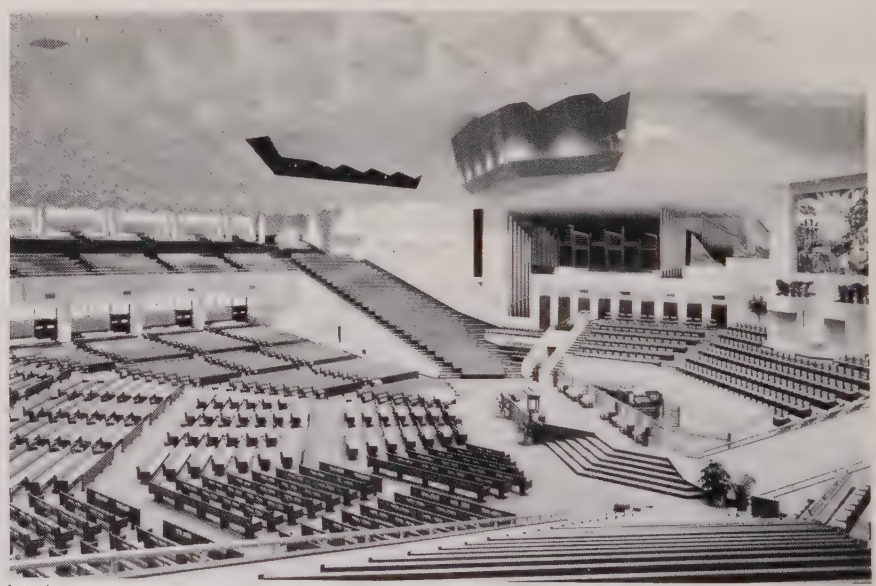
As future-phase buildings are added to the worship center, the horizontal concourse will be created between them. At the conclusion of Phase 5, the concourse and central atrium will be complete.

Project Facts

- *Building area*: Worship Center Building, including Music Suite, = 136,000 SF; three-story Education Building = 71,000 SF; total floor area = 207,000 SF
- *Worship Center capacity*: 6,200 seats = 4-1/2 football fields
- *Roof area*: 150,000 SF = 3-1/8 football fields
- *Total tons of structural steel*: 980 tons (if stretched, into a 1/4" cable, the cable would reach from Orlando to Salt Lake City)
- *Weight of the master truss*: 142 tons. The structure was built without interior columns. Long-span steel trusses were used, one main 140-ton truss girder spanning 180 feet, 18 feet tall, supporting two 70-ton secondary girder trusses spanning about 170 feet.
- *Concrete used*: 12,500 cubic yards
- *Reinforcing steel*: 1,265 tons
- *Catwalks above ceiling*: 3,500 linear feet
- *Heating/air conditioning*: 1,000 tons
- *Electrical conduit*: 250,000 linear feet
- *Electrical wire used*: 1,000,000 linear feet
- *Number of light fixtures*: 4,000
- *The cross at top of Worship Center*: 42 feet tall standing 25 feet above the roof line and weighs 2.5 tons. The arms span 12 feet.
- *Acoustics*: A design was created to provide a full acoustical environment in light of the absence of sidewalls to bounce and project sound. It is formed from double layers of sheetrock in a series of triangles and inverted pyramids. Joiner, Pelton, Rose, Inc.
- *Sound reinforcing system*: A central three-cluster speaker system was used: the cluster speakers for voice and the right and left speakers for stereo-recorded material. The speaker enclosure is mounted approximately above the pulpit at the ceiling. The enclosure is 70' wide by 12' deep and 15' tall. A 32-channel mixer sound board as well as house lighting control is located centrally at the front edge of the balcony.
- *Pipe organ*: Span from side to side = 200'; 118 ranks, 4 manuals and pedal. Three 32' ranks as well as an independent 10-2/3' and Harmonics III of the 32' series, in the pedal. There are two horizontal trumpets in copper, projecting from below the facade on either side. The console is moveable both within the confines of the orchestra lift and to positions outside the choir loft.
- *Orchestra lift*: A 20' x 80' hydraulically operated orchestra lift is the largest elevator in Florida outside of NASA's on the Cape. The lift is in two independent sections and allows the orchestra to practice, load instruments in the basement, and then rise dramatically between the pulpit and the choir loft while performing. Gagnon LaForest, Inc., Canada.
- *Moveable stained glass feature*: A major stained glass panel (20' x 30') above the thrust baptistry is motorized and rolls away to both sides leaving space for drama or a rear projection screen.

Photo by Ben Tanner, Orlando, Fla

Schantz 118-pipe organ located behind choir



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Interior

First Baptist Church, Orlando, Fla.

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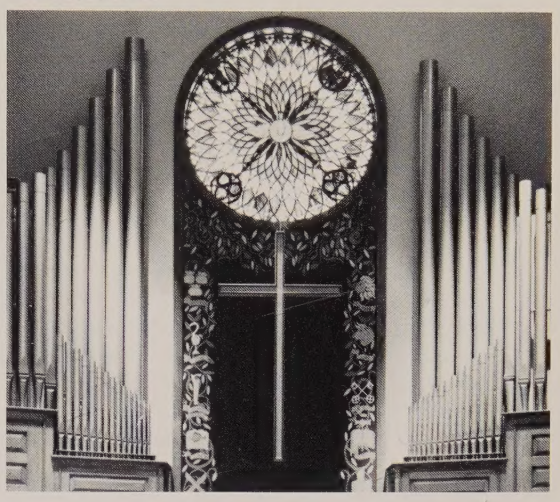

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IFRAA North Central Region #3 Metro Forum
Minneapolis, MN

This will be an initial metro-forum meeting for Region #3—North Central States and Provinces.

Regional Director: George Lund, AIA, (913) 383-1450
Metropolitan Coordinator: John Koch, (612) 338-1150

November 10-13, 1985

IFRAA Southeast Region #6 Conference/National Meeting
Atlanta, Georgia, Emory University.

The conference will include an exhibit of 1985 Architectural and Art Awards. Conference headquarters at Colony Square Hotel, Peachtree & 14th Sts., Atlanta.

Regional Director: Rev. Albert Fisher, (919) 489-3359
Conference Coordinator: Jack Gilbert, AIA, (404) 727-4482

April or May 1986

IFRAA South Central Region #5 Seminar
Houston, TX

A one-day, metropolitan Houston seminar.

Regional Director: Ernest E. Verges, AIA, (504) 488-7739.
Coordinators: Win Center (713) 988-9161 and Marley Green, AIA, (713) (621-7620)

October 12-15, 1986

IFRAA National Conference
Berkeley, California at Marriott Inn, 200 Marina Blvd., on East San Francisco Bridge.

This conference will enjoy the facilities of the Graduate Theological Union, the University of California School of Architecture and the Judah Magnes Museum. There will be a pre-conference tour of the wine country and a post-conference tour of Japan.

Coordinator: Frank Mighetto, AIA 415-548-5700.
Japan tour inquiries: Rev. Donald J. Bruggink, Western Theological Seminary, 86 East 12th Street, Holland, MI 49423

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